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ABSTRACT

GRADES OR AGES: Grades 5-12. SUBJECT MATTER: Smoking. ORGANIZATION AND PHYSICAL APPEARANCE: The guide has three major parts--1) an outline of basic facts; 2) resource guide on smoking and its relationship to health and disease, with sample lesson plans and vocabulary; and 3) appendix, including questionnaires, selected key facts on smoking, a sample open letter to parents, the Thompson smoking and tobacco knowledge test, and a bibliography and list of resource materials. The guide is lithographed and staple bound with a soft cover. OBJECTIVES AND ACTIVITIES: Objectives for teachers and students are provided for grades 5 and 6, grades 7, 8 and 9, and grades 10, 11 and 12. Suggested activities are given for the same three sections, together with sample lesson plans. INSTRUCTIONAL MATERIALS: A brief bibliography is included together with a list of educational materials for teachers, the general public, and students. STUDENT ASSESSMENT: Suggestions for evaluation of grades 5 and 6 are included which use the questionnaires. (MBM)

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*One fact filters through
Smoking's not for
you!*

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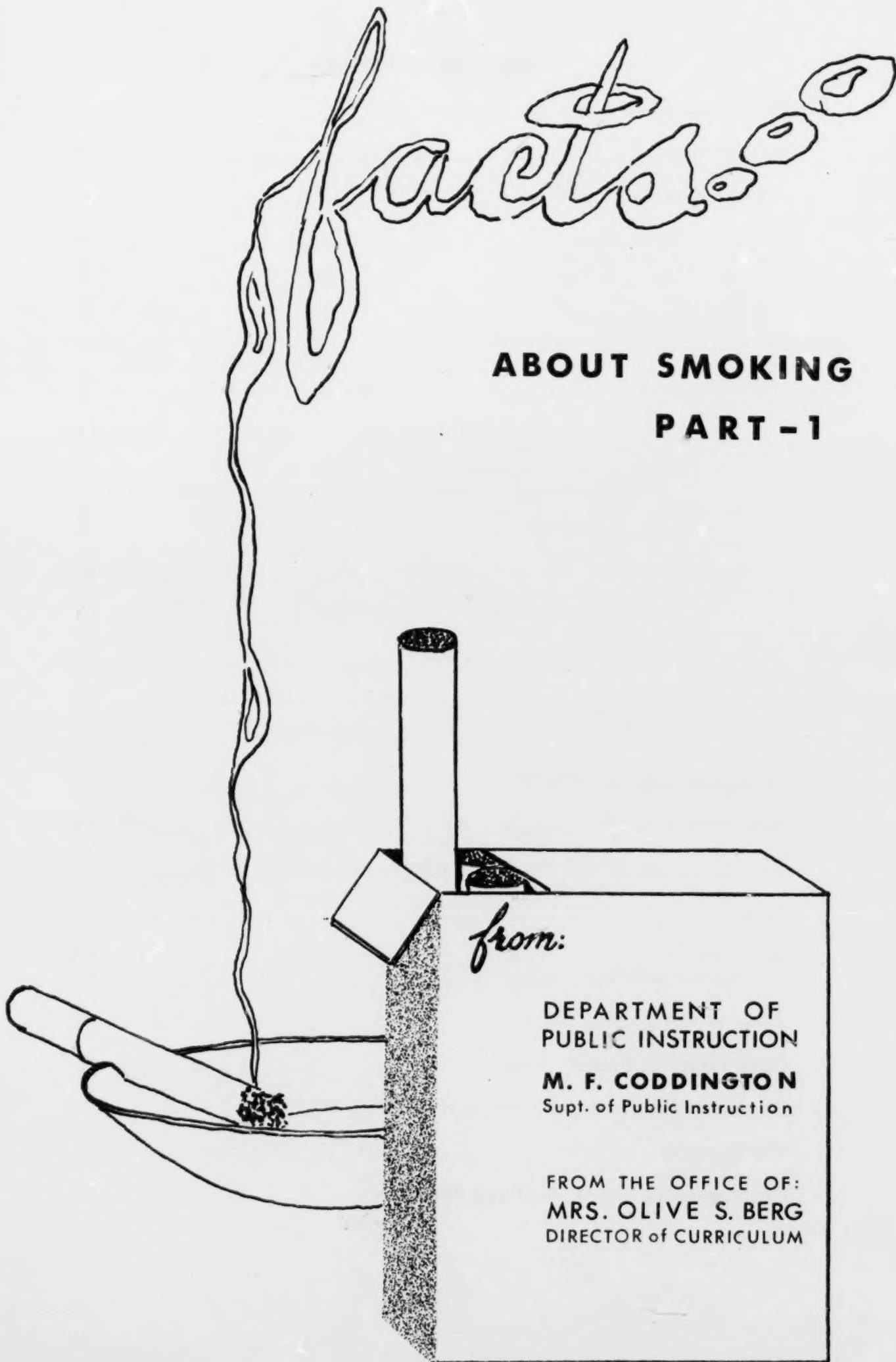
DEPT. of PUBLIC INSTRUCTION
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From the office of: Mrs. OLIVE S. BERG
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*Guide
on
Smoking*

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FOREWORD

The State of South Dakota has had statutory laws concerning the use of narcotics, alcohol, and tobacco for many years. In recent years there has been an increased concern on the use of tobacco and its direct relationship to the harmful effect with the release of the Surgeon General's Report on Smoking.

It is apparent that our schools must take a more positive approach to the matter of education and law enforcement in regard to smoking. South Dakota law states:

SDC 1960 Supp. 13.1509 Cigarettes or materials for; supplying to minors; penalty: It shall be unlawful for any person, directly or indirectly, upon any pretense or by any device, to supply to any person under the age of eighteen years any cigarette, cigarette paper, or cigarette wrapper prepared or designed to be used for filling with tobacco for smoking. Any person violating any provision of this section shall be guilty of a misdemeanor and upon conviction thereof shall for the first offense be punished by a fine of not less than ten dollars nor more than twenty-five dollars; and for the second and each subsequent offense by a fine of not more than one hundred dollars or by imprisonment in the county jail not to exceed thirty days or both.

Source: Section 1, Ch. 36, 1949.

SDC 1960 Supp. 13.1510 Minor smoking cigarettes in public place or permitting such; penalty. Every person under eighteen years of age who shall be found smoking cigarettes in a public place shall be dealt with as a delinquent child under the provisions of SDC 43.03, and any person in charge of a public place who shall knowingly permit a minor to smoke cigarettes therein or thereat is guilty of a misdemeanor.

Source: Sec. 2, Ch. 36, 1949.

This curriculum guide has been prepared to furnish background material, teaching suggestions and help to the teacher for use in the schools of South Dakota.

INTRODUCTION

With the release of the Surgeon General's report on **SMOKING and HEALTH** in January, 1964, there was an immediate response by educators, public health persons, and all others interested in the relationship of health and disease to the smoking of cigarettes.

Smoking has become an ever-increasing habit among our youth and adult populations.

National publicity on research findings concerning the effects of tobacco, and the components which make up the salable tobaccos, has aroused the medical and associated health professions to alert the public. Research findings on the hazards of smoking can no longer be ignored.

The schools of the nation have an important responsibility to present the known scientific facts pertaining to the effects of smoking on bodily health. Furthermore, schools should point out the cost of purchasing tobacco and the possible fire hazards associated with smoking.

From the practical standpoint, there is ample evidence to justify advising the public and particularly young people that cigarette smoking is harmful to health. Smoking is a habit based on psychological and physical factors.

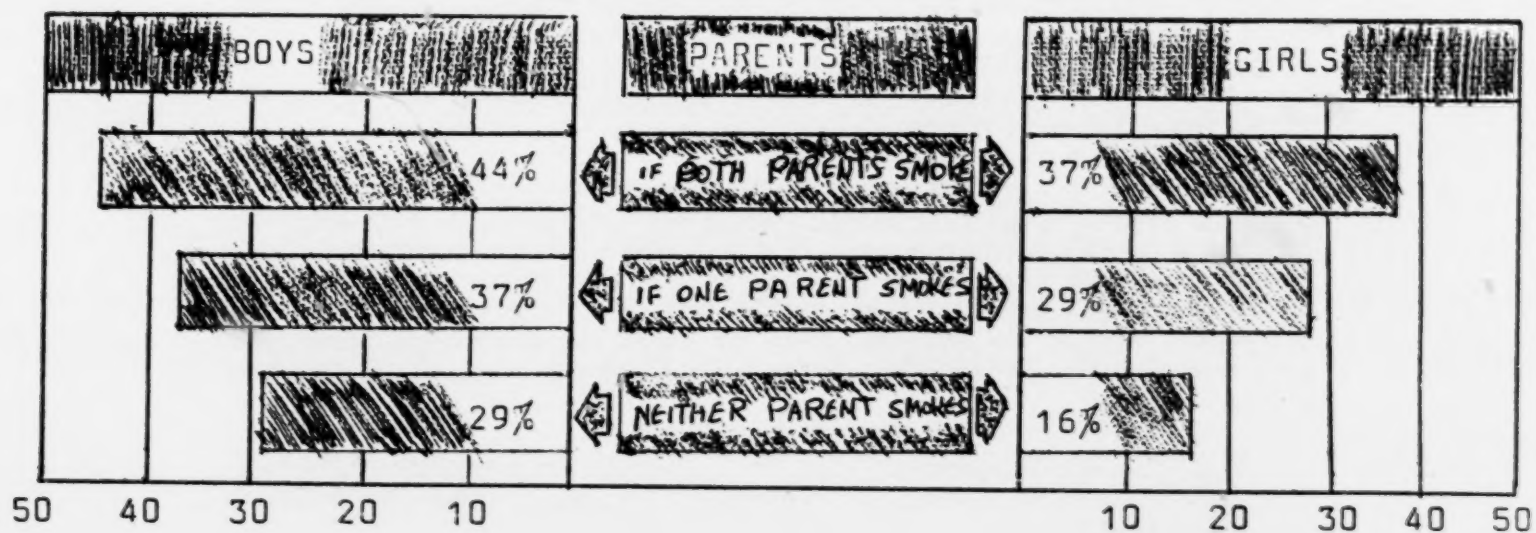
Research studies on why teenagers begin to smoke show that the motivations are complex, that they are strong and that the decision to smoke is not made in terms of good or poor health practices.

One million children now in school will die of lung cancer disease, if present trends continue, before they reach 70. Today, about 44% of all high school seniors and 21% of all freshmen smoke—one in three high school students.

The American Cancer Society's Teen-age Program on Cigarettes and Lung Cancer seek to help both parents and youngsters arrive at decisions based on the evidence. The program was based on a year's study of student attitudes toward smoking in Portland, Oregon, and ways of influencing them. Single, most important factor in a youngster's smoking is whether or not his parents or siblings smoke.

TEEN-AGE SMOKING LINKED TO PARENTS

If parents smoke, their children are more likely to smoke while still in high school.



THE ADMINISTRATOR

To you, an administrator, the problem of youth and smoking is more often one associated with discipline. You see the end product, youngsters who legally cannot buy cigarettes or smoke them on school property—yet who do both, sometimes behind your back and sometimes defiantly to your face. To them, smoking represents maturity, group approval, and status. All boys and girls of the same age group do not require such a crutch, yet nearly all boys and girls will try smoking at one time or another.

Education has the responsibility to help them decide on a more intelligent approach to the problem. Schools can present scientific information in an educational way that will offer American youth a challenge. This challenge, involving their own health, seemingly in the far-off future, will help them to decide now that there are other less dangerous "props" to advance them to maturity; that "separating the men from boys" may be represented by a 12 or 13-year old who makes a wise decision.

You, the superintendent, has an important responsibility to provide for inclusion of instruction regarding the role of cigarette smoking and individual health.

You, the principal, has an important role to play. You can, and should, encourage and help your teachers from later elementary grades and through high school to implement instruction regarding the health hazards of cigarette smoking.

More than textbook presentation is needed to effectively teach positive health practices and attitudes. Experience has proven that the following procedures will be beneficial to your educational program in smoking and health:

1. Appointment of a staff member to coordinate the program in a given school.
2. Organization of a faculty advisory committee to plan effective use of the guide.
3. A faculty meeting to orient all staff members to the program.
4. Pupil involvement at all levels, capitalizing on student leadership.

The Teacher:

Of all the major health problems prevalent today, cigarette smoking is one which can best be controlled through education. The most effective program is one which involves all departments of the school, under the leadership of a person designated by the administrator as coordinator of this program.

You, the teacher, can get most satisfactory results by actively involving the students in the problems of cigarette smoking through panel discussions, debates, song writing, poster designs and skits.

The Parent:

Parents represent the primary source of a child's education. Since smoking is started and carried on outside the school, it is obvious that parental guidance is needed in this kind of program. In homes where parents smoke and where cigarettes are available, the incidence of children smoking is proportionately higher.

The Parent-Teachers Association:

P.T.A. has been active in a campaign against early smoking. P.T.A. programs could be planned by students or adults. Such programs could be enriched by speakers, and by the use of films available through public health agencies.

OUTLINE OF BASIC FACTS

I. Physiological

A. Increased heart load

1. The efficiency of the heart under strain is lowered even for moderate smokers.
2. At ten beats per minute increase, in 20 years the heart contracts 4 million more times than the non-smoker.
3. One cigarette can speed up the heart from 20-50 extra beats per minute.
4. Most doctors acknowledge smoking as a contributing factor in heart disease. This is not proven, however.
5. Filters do not substantially reduce the hazards.
6. The effects of one cigarette on the body last on the average of 10-30 minutes.

B. Rise in blood pressure

1. Blood pressure rises due to smoke inhalation.
2. The effects after one cigarette last from 35-45 minutes.
3. Total overload on the heart could be 10 per cent even though the person involved is at complete rest.

C. Circulatory weakness

1. Temperature of the extremities may drop from 1-5 degrees centigrade. (In a 40% denicotinized cigarette, the temperature was lowered 4.8 degrees showing it had little effect in this respect.)
2. This effect could last 30 minutes or more.
3. The weakness occurs because the tiny capillaries in the extremities contract allowing less warm blood in these parts. As a result the temperature goes down. Since it is therefore more difficult to get blood to these parts, the blood pressure increases in order to do so.
4. Use the example of the water hose. As the hose is turned off at the nozzle a greater pressure is exerted.

D. Increased metabolism (speeding up rate at which body works).

1. An increase of from 5-10 per cent is standard.
2. In some people the rate is as high as 50 per cent.

E. Stomach reactions

1. Gastric secretions are increased.
2. Hunger contractions cease a few minutes after the smoking of one cigarette. This accounts for an adult's lack of hunger if he smokes before a meal. In teenagers the desire for and the need for food is so strong that this reaction may not affect them as much. Be that as it may, smoking may be a factor in the malnutrition of teenagers.

F. Reaction time is unaffected by the smoking habit.

II. **The Effects of Smoking** Principal Findings¹

Cigarette smoking is associated with a 70 per cent increase in the age death rates of males, and to a lesser extent with increased death rates of females. The total number of excess death causally related to cigarette smoking in the United States population cannot be accurately estimated. In view of the continuing and mounting evidence from many sources, it is the judgment of the Committee that cigarette smoking contributes substantially to mortality from certain specific diseases and to the over-all death rate.

LUNG CANCER

During the sixty years from 1900 to 1960 total death rates decreased rapidly. The one exception is lung cancer. Deaths from this disease numbered 4,000 in 1935; 11,000 in 1945; 36,000 in 1960. It is estimated that the number of deaths from lung cancer in 1960 was equal to the number of deaths from traffic accidents. (This fact will be emphasized again)

Investigations in other countries corroborate this finding, that deaths from lung cancer are increasing.

Men with a history of regular cigarette smoking only have the highest death rate, and men who never smoked have the lowest death rate. Persons who smoke cigarettes develop lung cancer much more frequently than do non-smokers of the same age. Cigarette smoking is the major cause of lung cancer. Also, danger of death from lung cancer increases as the number of cigarettes smoked is increased.

Death rate increases as the degree of inhaling cigarette smoke increases.

Although death rates from lung cancer were found to be higher in cities than in rural areas, death rates from lung cancer were higher among cigarette smokers than among non-cigarette smokers, whether urban or rural.

Death rates from lung cancer drop among those who have given up smoking and who cut down on their smoking; the longer the period of non-smoking, the lower the death rate.

1. U.S. Department of Health, Education, & Welfare Summaries and Conclusions, **Smoking and Health**, Report of the Advisory Committee, to the Surgeon General of the Public Health Service, pp. 31-32.

Cigarette smoking is causally related to lung cancer in men. The magnitude of the effect of cigarette smoking far outweighs all other factors. The data for women, though less extensive, point in the same direction.

The risk of developing lung cancer increases with duration of smoking and the number of cigarettes smoked per day and is diminished by discontinuing smoking. In comparison with non-smokers, average male smokers of cigarettes have approximately a 9-10 fold risk of developing lung cancer and heavy smokers at least a 20 fold risk.

The risk of developing cancer of the lung for the combined groups of pipe and cigar smokers is greater than the non-smokers, but much less than for cigarette smokers.

Cigarette smoking is much more important than occupational exposures in the causation of lung cancer in the general population.

CHRONIC BRONCHITIS AND EMPHYSEMA

Cigarette smoking is the most important of the causes of chronic bronchitis in the United States, and increases the risk of dying from chronic bronchitis and emphysema. A relationship exists between cigarette smoking and emphysema, but it has not been established that the relationship is causal. Studies demonstrate that fatalities from this disease are infrequent among non-smokers.

For the bulk of the population of the United States, the relative importance of cigarette smoking as a cause of chronic broncho-pulmonary disease is much greater than atmospheric pollution on occupational exposures.

III. Tobacco Chemistry

A. Tobacco has been broken down into over 100 compounds. Some of the more familiar ones are:

1. Formaldehyde
2. Ammonia
3. Carbon Dioxide
4. Carbon Monoxide
5. Hydrogen Cyanide
6. Hydrogen Sulfide
7. Arsenic
8. Nicotine

B. Some facts about Nicotine

1. It is odorless, tasteless and colorless.

2. A drop or so is all that is necessary to kill a human being.
3. Snuff, pipe tobacco, cigar tobacco and cigarettes contain varying amounts of nicotine but are generally ranked in this order. Cigarettes are strangely enough ranked last, but cause more bodily harm due to inhalation.
4. An inhaling smoker absorbs an average of 60 mg. of nicotine from one pack of cigarettes and a non-inhaler absorbs an average of 7 mg.

IV. Sociological

1. Higher occurrence of lung cancer among cigarette smokers.
2. Stopping, even after long exposure, is beneficial.
3. Non-smoker has lower incidence of lung cancer than smoker in all controlled studies, whether analyzed in terms of rural areas, urban regions, industrial occupations or sex.
4. Education in the early teens seems to be the most effective way to produce the non-smoker.
5. Main factors contributing to the onset of smoking habit are:
 - a. Identification with smoking parents
 - b. Maturity stirring
 - c. "Adult thumb sucking"
6. Once adopted, the physiological and psychological complex develops and the habit continues independent of original motives.

Teenage Smoking:

1. Accepted eventually by family as normal and expected behavior.
2. Habit is high among those who have fallen behind age equals in school.
3. Higher among non-participants in extra-curricular activities.
4. High among those who have not achieved satisfaction from peer-group relationships.
5. Higher in urban as opposed to rural areas.
6. Seventh grade is considered to be the most common grade in which students experiment with smoking.
7. Teenagers seem to react positively to a direct, unemotional, intellectual approach which enables them to sift the facts and reach their own conclusions about smoking.

Guide lines

**GRADES 5-12
PART TWO**



***Smokeless
Smokies***

**DEPARTMENT OF
PUBLIC INSTRUCTION
M. F. CODDINGTON
Supt. of Public Instruction**

**FROM THE OFFICE OF
MRS. OLIVE S. BERG
DIRECTOR of CURRICULUM**

**RESOURCE GUIDE ON SMOKING AND ITS
RELATIONSHIP TO HEALTH AND DISEASE
FOR ELEMENTARY GRADES 5 AND 6**

To The Teachers of Grades 5 and 6

Why have a section of this **Guide on Smoking** devoted to the upper elementary level? If you are alert to today's knowledge regarding the relationship of smoking to health and disease, you are aware that there is evidence which dictates that the late elementary years should contain curricular material related to the dangers of the tobacco habit. This is the time to present the facts regarding smoking to students **PRIOR** to the crucial decision phase as represented by the teenage years.

"To smoke or not to smoke" for most sixth graders will soon take on the nature of a crucial decision. It has now been determined that education on the effects of smoking needs to begin in the later elementary grades in order to understand the many pressures which influence adolescents to begin smoking. Too often an early decision to begin smoking develops into a lifetime habit. Through education, pre-teenagers should become aware of the effect such a decision will have on their health and well-being.

The challenge to education is clear. The conclusive evidence against smoking must be interpreted through educational curriculum.

Social stimulation appears to play a major role in a young person's first experiments with smoking. No scientific evidence supports the popular idea that smoking is an expression against authority. The overwhelming evidence indicates that smoking is to a very large extent psychologically and socially determined.

This section of the total guide is designed to aid teachers at the fifth and sixth grade levels to plan learning experiences on "smoking education" for a variety of teaching situations. These will include health instruction, classroom conferences, experiences in reading, writing, discussion and experimentation, in all areas of the elementary school curriculum.

In this guide, the following recommendations are made:

1. That the positive approach be emphasized by teachers with confidence that scientific evidence will lead to wise decisions being made by students. Peremptory dictation or moralizing should be avoided in the presentation. The facts should be permitted to speak for themselves.
2. That scientific data should be presented unemotionally without sensationalism, but with enough emphasis to acquaint students thoroughly with the danger when smoking becomes a habit.
3. That over-all school planning should be provided, so that all students in the fifth and sixth grades become acquainted with the "smoking story".

As students become enlightened about current tobacco education as they participate in some of the activities of this guide, it is obvious that they are also achieving other worthwhile educational goals.

OBJECTIVES FOR TEACHERS

1. To know current evidence which links smoking to health problems.
2. To help children relate their own health to current social problems including smoking.
3. To promote an interest on the part of students to discover scientific evidence on smoking for themselves.
4. To help students analyze the advantages and disadvantages of smoking.
5. To be able to critically evaluate the advertising technique of the tobacco industry.
6. To develop an objective attitude toward smoking in the community, and to carry on smoking education intelligently with parents and other adults.
7. To encourage students to make a realistic appraisal and a mature judgment about smoking.

OBJECTIVES FOR STUDENTS

1. To accept personal responsibility for improving and safe-guarding one's own health.
2. To become familiar with current scientific information about smoking and its effects on health.
4. To understand the variety of reasons people have for smoking.
5. To understand the psychology of smoking as a habit.
6. To learn to evaluate the psychology of advertising in relation to smoking.
7. To accept the responsibility for making a personal decision regarding smoking.
8. To assume responsibility as a future citizen for concern about such public health problems as smoking.
9. To understand how this learning unit on smoking can affect health attitudes and behaviors.
10. To develop the skill of demonstrating the effects of smoking using several scientific proofs of demonstrations.
11. To appreciate and to assist in initiating or continuing smoking education with parents and others in the community.

SUGGESTED LEARNING ACTIVITIES

1. Conduct a poster contest to see who can develop the most original idea or the most emphatic approach against development of this habit.
2. Where smaller children come in contact with smoking education activities receiving publicity in school, explain to them why the fifth and sixth grades are studying the effects of tobacco and smoking.
3. Have children discuss or set up a panel to discuss "Why People Smoke."
4. Post examples of cigarette advertising and ask students to evaluate critically the approach and content of the ads.
5. Display the American Cancer Society exhibit—a wheelbarrow of cigarette butts and jar of "tar." Stimulate children to think and improve their own exhibits.
6. Show a recommended film or filmstrip. Introduce it adequately, but use it to motivate interest in additional learning activities.
7. Urge television "On Camera" teacher to devote a program to smoking education.
8. Develop vocabulary and terms relating to smoking.
9. Send for materials on smoking to a variety of health agencies. Combine this with experience in letter writing, handwriting or typing, and grammar.
10. Create bulletin boards for classrooms and school building.
11. Create cartoons, slogans, riddles, puns, poems, songs, posters, graphs, tables, charts, and jingles relating to effects of smoking.
12. Maintain a scrapbook. Paste in ads, articles, etc. in relation to smoking and health and disease.
13. Explore history of production and use of tobacco by man.
14. Organize an exhibit of tobacco products.
15. Set up an exhibit of books, pamphlets, and materials on smoking procured from health agencies.
16. Borrow slides and X-rays showing damage done by lung cancer and other chronic lung diseases.
17. Invite neighboring high school athletes to talk about the relationship of smoking and physical fitness.
18. Interview athletic coaches to find out what such authorities say about athletes smoking.

19. Ask students to survey adults on why they smoke. Students could develop a questionnaire with teacher guidance.
20. Construct exhibits for health fair or science fair. Call on local health agencies for materials and displays. (South Dakota Tuberculosis & Respiratory Disease Association, South Dakota Heart Association, South Dakota Cancer Society, Cancer Foundation).
21. Organize a fifth or sixth grade assembly. Invite a resource speaker.
22. Have poster displays. (Write to Dept. of Health; Nat'l Council on Smoking & Health, Wash., D. C.; and to other health agencies for display poster materials.)
23. Maintain a class file of current pamphlets or newspaper articles citing evidence to harmful effects of smoking.
24. Analyze the cigarette filter approach. How effective are they and what does use of filter imply?
25. Select students to report on several recommended articles on smoking. Let this lead to discussion and to teacher-pupil planning about subsequent activity.
26. Allow class to organize into subcommittees for areas of special interest in smoking education.
27. Discuss smoking as a habit. Interview adults who have tried to stop, disclosing: techniques used (including anti-smoking drugs), physical and psychological reactions, success and failure rates.
28. Discuss public health strategy for curtailing or reducing the smoking problem, such as restrictive legislation, increased taxation, labeling danger on wrapper or package, educational approaches.
29. Survey unsupervised cigarette vending machines in neighborhood.
30. Investigate quackery in relation to smoking and health.

EVALUATION

If you would like to get a rough idea of any change in students' smoking habits, you could:

- a. Give the questionnaire to class members who will be receiving information on smoking.
- b. At the end of the semester, give each group a second questionnaire.
- c. Tabulate both sets.
- d. Compare the degree of change between members of the sample group and those of the control group.

SAMPLE LESSON PLANS²

I. First Lesson

- A. Give a pre-test. This should indicate student understanding to the teacher and serve to develop interest in the unit. **The Thompson Smoking and Tobacco Knowledge Test** included in the Basic Materials Section of this guide may be used as a pre-test. It is especially suited to those students who read on the 7th grade level or above.
- B. Lead a short discussion on the quiz after tabulating results.
- C. After discussion, point out that each student will soon be faced with the decision to smoke or not to smoke. This leads into an interpretation of the stated objectives which have an over-all design of helping the student arrive at an intelligent decision on the smoking dilemma.
- D. Have the student send for materials on smoking.
- E. Make copies of **An Open Letter to Parents**² (page 65 of this section) and assign a home discussion of attitudes towards smoking.

II. Second Lesson

- A. Discuss questions raised as a result of "An Open Letter to Parents."
 - 1. Point out that a decision to smoke may develop into a lifetime habit which is difficult to break even when the smoker desires to stop.
 - 2. Have students bring to class the tissues with tobacco tars and compare each of the examples outlined in the letter.
- B. Discussion - What are the physical effects of smoking?
 - 1. Nicotine in cigarettes is a poison which is colorless, tasteless and odorless. A beginning smoker may feel nauseated and dizzy due to the nicotine. Smoking is never enjoyed by the beginner even though he may not admit just how little he does enjoy it.
 - 2. Smoking leaves a bad taste in the mouth and dulls the taste organs. Food doesn't taste as good and the appetite is affected.
 - 3. Smoking makes the breath smell bad. This is distasteful to those who do not smoke.
 - 4. Smoking lowers athletic performance. Most coaches have rules against smoking. Use a local coach as a resource person.

². Adapted from Smoking Teaching Guide, Spokane Public Schools, Spokane, Washington.

5. Lung cancer, a deadly illness, is caused by smoking cigarettes. Not everyone who smokes will get cancer, but not everyone who runs into the street will be hit by a car either. Yet more people have died in a single year from lung cancer than those who died in highway accidents. A million of today's children are expected to die eventually of lung cancer.
6. Smoking shortens life. (While the possibility of increased life expectancy through non-smoking has little meaning for children, still teachers cannot ignore the statistics predicting life expectancy.)
 - a. Of 100,000 non-smokers, 66,500 can expect to reach the age of 60. Of 100,000 moderate smokers, 62,000 can expect to reach the age of 60. Of 100,000 heavy smokers, 46,000 can expect to reach the age of 60.
 - b. For coronary artery disease, the leading cause of death in this country, the death rate is 70 per cent higher for cigarette smokers. For chronic bronchitis and emphysema, which are among the leading causes of severe disability, the death rate for cigarette smokers is five times as high as that of the non-smoker. For lung cancer, the most frequent type of cancer in men, the death rate is nearly 10 times that of the non-smoker.
7. Smoking has no effect on growth. However, it does cause immediate physical reactions. Pulse and breathing rates increase. The blood pressure is affected. Throat, bronchial tree, and lungs are irritated. Smoking aggravates many diseases of the heart, circulation and chest.

III. Third Lesson

A. Cost of Smoking

1. Figure out how much cigarettes cost each week, each month and for one year. What could be bought with the money if it were not spent for cigarettes?

HOW MUCH DOES SMOKING COST?				
Packs Smoked	per day	Savings if money is put in bank for:		
		5 years	10 years	15 years
1		\$ 610.00	\$1,327.00	\$2,160.00
1½	28¢	915.00	1,990.00	3,250.00
3		1,830.00	3,981.00	6,480.00

2. Americans spend over 7 billion dollars a year on tobacco products.

B. Cigarettes and Fires

Can you find news items on deaths caused by fires which were suspected to be started by cigarettes?

C. Advertising Dishonesty and Irresponsibility

1. Discuss certain dishonest suggestions found in advertisements. Example: A famous opera singer is quoted as saying, "Cigarettes never hurt my voice." He was telling the truth, but they didn't hurt him because he didn't smoke.
2. Why do athletes endorse cigarettes? Do they get paid?
3. Post examples of cigarette advertising and ask the students to analyze and criticize the content of these advertisements. An amusing film, "Up in Smoke" might be used at this point since it refutes many of the suggestions found in advertising.
4. Note that the British Government has banned cigarette advertising on television and radio until after 9 p.m. and Italy has banned all cigarette advertising.

D. Review reasons why boys and girls start smoking.

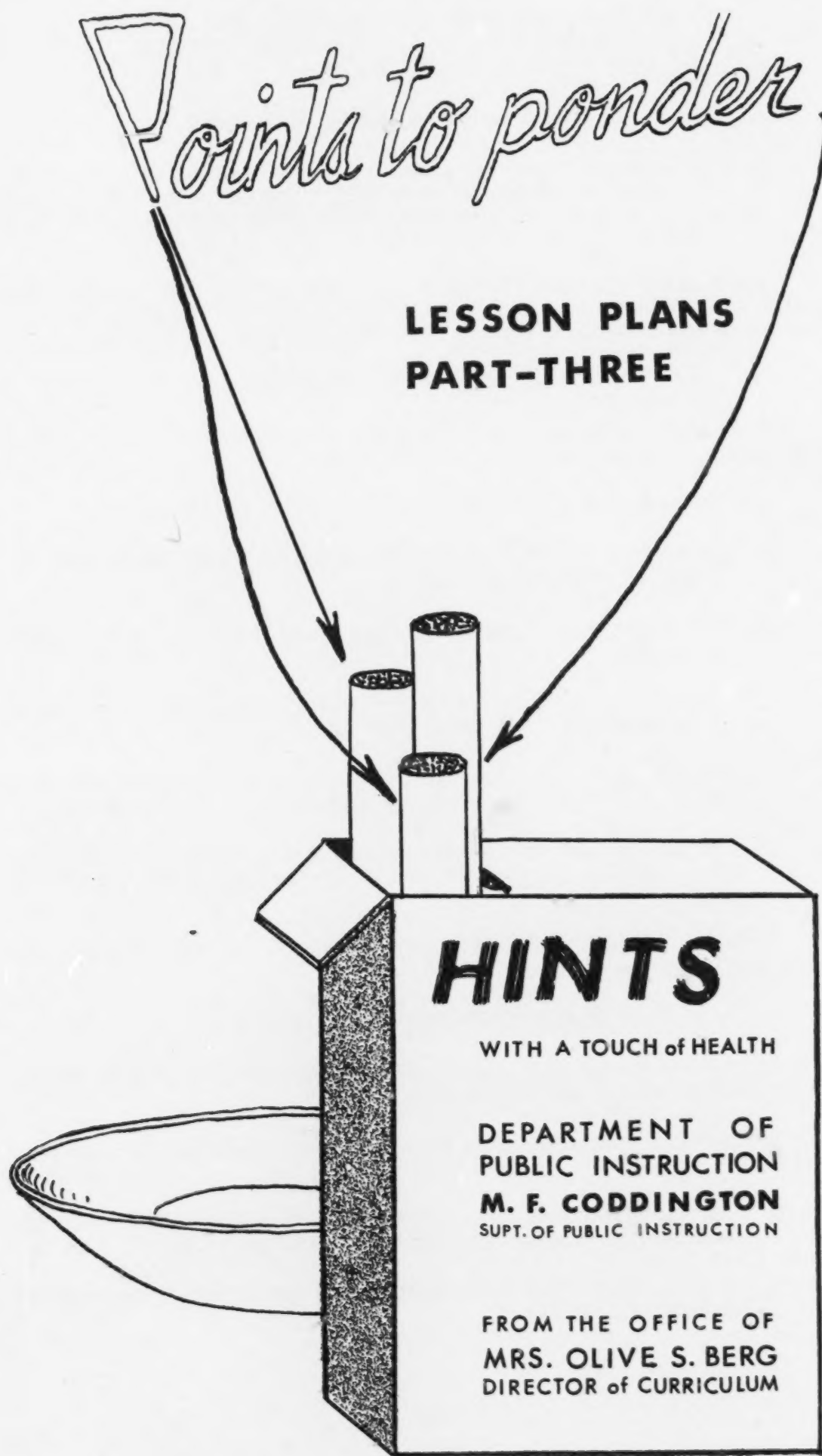
IV. **Fourth Lesson**

Show the filmstrip, "I'll Choose the High Road."

B. Use the **Thompson Smoking Test** for evaluation and review.

C. Plan further activities

1. Panel discussion - Why do people smoke?
2. Set up experiments - Smoking machine
3. Create exhibits - Cartoons, poems, bulletin boards, etc.
4. Organize a 5th- and 6th-grade assembly. Invite a speaker who might be obtained from one of the agencies listed under Resources.
5. Survey unsupervised cigarette vending machines in the neighborhood.
6. Interview adults who smoke, or who have stopped smoking. Why? Develop a questionnaire for adults to measure their current knowledge on smoking.
7. Compile a vocabulary list for the unit. (See suggested list in Basic Materials Section).



**RESOURCE GUIDE ON SMOKING AND ITS
RELATIONSHIP TO HEALTH AND DISEASE
FOR JUNIOR HIGH GRADES 7, 8, and 9**

To The Teacher of Grades 7, 8 and 9

Of all the major health problems prevalent today, cigarette smoking is one which can best be controlled through education. Schools vary widely in their health programs, the problem of smoking has been treated in various ways.

Since many children do begin to smoke during their junior high years, the teachers must realize the importance of their role in developing the proper attitudes toward the health hazards of smoking.

OBJECTIVES FOR TEACHERS

Following are general objectives for the guidance of teachers in a smoking prevention program in junior high:

1. To understand some of the reasons why people smoke.
2. To become acquainted with the scientific facts about and the effects of cigarette smoking.
3. To accept responsibility for one's own behavior with regard to smoking.
4. To acquire the ability to evaluate critically facts versus fiction in present day advertising.
5. To recognize the economic and political influences on individual judgments in the use of cigarettes.
6. To understand the reasons behind and to abide by local, state and federal laws and ordinances pertaining to cigarette smoking.

SPECIFIC objectives should be established by the teachers for each grade level and area of instruction.

OBJECTIVES FOR STUDENTS

During the junior high school years the following objectives should be developed and/or strengthened:

1. An understanding that good health is to be valued and protected.
2. An understanding that good health is essential to be an effective and functioning member of society.
3. A realization that maintaining good health often depends on individual decision.

4. An understanding that wise decisions about one's health depend on knowledge of facts and attitudes toward health hazards and that cigarette smoking is a major health hazard.
5. An understanding that people smoke cigarettes for various reasons; many smoke without realizing the threat to their health; and many are aware of the threat but choose to disregard it.

Placement in Junior High Curriculum and Suggestions for Inclusion of Smoking Education

Education in the junior high regarding smoking should take place in all grades every semester. Each teacher in each of the designated areas of the curriculum should select instructional materials and points of focus on the basis of the maturity of the students.

HEALTH AND PHYSICAL EDUCATION

Health classes should provide instruction regarding facts and effects of smoking on the various systems of the body.

Physical Education should emphasize the effect of smoking on development of physical skills in daily class work.

Sports should establish standards and restrictions for participants.

Physical examinations should emphasize the value of periodic examinations as related to total health..

Health and physical education teachers should make evaluations of educational programs designed to improve the health of physical education pupils and should review the school's rules and regulations pertaining to smoking.

GENERAL SCIENCE

Demonstrations regarding chemical compounds involved in cigarette smoking. Point out that if cancer has not actually developed and one stops smoking, the body will start to repair itself.. (Especially the lungs and kidneys.)

Experimentation and research originated by pupils, such as use of chemical compounds known to be in cigarette smoke.

Review of the physiology of body organs and their relationship to use of cigarettes. The Gilbert Report shows that teenagers are not buying cigarettes from vending machines because they will not pay the price, but buy them over the supermarket counter.

SOCIAL STUDIES

Collect historical information regarding the growth in production of tobacco and its place in the nation's economic development.

Study acreage control from America's first settlement in 1608 to the present consideration.

Evaluate the tax procedures of using revenue derived from tobacco sales for the support of public schools.

Study local, state and national laws regarding cigarette smoking.

Appraise the method of selling cigarettes by vending machines as related to the legal requirements on teen-age consumption.

Examine smoking as a social custom.

SCHOOL NURSE AND HEALTH COUNSELLING

Act as a resource person to classrooms on request or by self-invitation.

Counsel individuals with whom working, also their parents.

Refer chronic smokers to designated school personnel.

GUIDANCE AND COUNSELLING

Individual—counselors and teachers help individual smokers to explore their reasons for smoking. Help them to evaluate the habit.

Group—counselors and homeroom teachers interpret school rules and regulations regarding smoking, in terms of fire hazards, health, and protection of public property.

HOME AND FAMILY LIVING

Have pupils survey their attitudes toward themselves and examine their ways of achieving peer satisfaction. Through activities, such as role playing, demonstrate ways to meet the need without smoking.

Discuss various insurance plans regarding benefits to non-smokers.

Figure the effects of expenditures for tobacco on the family budget.

Study and discuss fire hazards as related to cigarette smoking.

Discuss family attitudes toward smoking.

HOME ECONOMICS

Review and conduct consumer education studies, including all pertinent information regarding advertising and marketing of tobacco products.

MATHEMATICS

The teaching of mathematics offers numerous opportunities for the treatment of data related to smoking. Pupils can work with statistical information on costs, profits, taxes from tobacco sales, and other economic factors. They also can work with available figures on health factors by preparing percentages, graphs, budgets, and charts.

Studies can be conducted by taking surveys of smoking habits and attitudes among adults and interpreting the results in mathematical expressions.

LANGUAGE ARTS

Pupils may be given opportunities to write plays, scripts, slogans and verses on the use and non-use of tobacco. Debates, forums, and panel discussions can help in decision making.

Use of role-playing in cigarette smoking education.

ART

The art department is in a position to be of specific help to all other departments endeavoring to present an educational program related to smoking. They can prepare illustrative and display materials upon request and upon own initiative.

Conduct or help to conduct poster contests.

Work with individuals or classes on exhibits.

LIBRARY

The library should contain an adequate supply and variety of current books and periodicals on the subject of smoking and its relationship to health and disease.

The librarian should introduce, and keep the faculty informed on material available for reference.

SUGGESTED LEARNING ACTIVITIES

It is important that pupils participate and give leadership in the planning and functioning of the various activities. Informational assemblies, club meetings, student council meetings, and interest group sessions can be planned around the smoking and health problem through the various media of instruction and communication.

Following are many suggestions for ways and means of including learning experiences. They fit into all areas of the junior high school curriculum. A coordinator within a school can assist the planning for their use.

1. Divide the class into small groups for a discussion of "qualities that click in a crowd" and "Are some crowds too exclusive?" Does smoking play a part in this?
2. Brainstorm the question, "Why do people smoke?"
3. Make graphs illustrating the incidence of heart disease, lung cancer, and emphysema among smokers as compared with non-smokers.
4. Discuss the ingredients of tobacco and their effect on the human body.

5. Do research reports on experiments with tar residue obtained from cigarettes, and discuss the relationship to cancer.
6. Report on experimental inadequacies of filter. (Some filter-tip cigarettes contain and yield more tar than non-filter cigarettes.)
7. Observe slides of normal and cancer cells under the microscope.
8. Develop a vocabulary to tobacco, smoking, and the relationship to disease.
9. List detrimental effects of smoking omitted by the tobacco manufacturers and advertisers.
10. Read and report on tobacco history. Much of the early American trade was based on tobacco.
11. Use models and charts on the heart and lungs for demonstration.
12. Visit the local Health Department and nearby hospitals for further information on cancer, heart disease, and respiratory conditions as related to smoking.
13. Construct a surprise bulletin board with cigarette ads. Do not use the captions, place question marks over the ads.
14. Collect clippings on aspects of smoking and health.
15. Read and analyze current articles on smoking and its effects.
16. Analyze filter-tip cigarette ads. Discuss why the ads are an admission that cigarette smoking is harmful.
17. Survey and compare qualifications of persons making statements regarding the use of tobacco.
18. Do parodies on cigarette advertising slogans, such as:

"Why filter springtime"

"Don't smoke. The life you save may be your own."
19. Prepare television commercials giving the scientific facts on smoking and lung cancer.
20. Have students bring in cigarette ads and tobacco ads and analyze them.
21. List claims of various cigarette manufacturers and evaluate these.
22. Figure the amount of money spent annually by a smoker who consumes a pack a day, two packs a day, etc.

23. Submit entries of exhibits on smoking for school science and health fairs.
24. Invite parents to a class assembly where school policy regarding smoking is discussed.
25. Have a student panel present a discussion for parents.
26. Have the student council conduct a poster campaign to disseminate facts on "To Smoke or Not to Smoke."
27. Invite resource persons such as the school nurse, the public health director, the coach, a physician, representatives from health agencies, to discuss aspects of smoking.
28. Select committees to visit local health agencies and report on their work related to smoking.
29. Write paragraphs on "I choose not to smoke (or to smoke) because _____"
30. Locate and discuss old proverbs related to smoking such as:

"For thy sake, tobacco, I would do anything but die."
Charles Lamb

"Pretending to be wise is what makes some people appear so foolish."
Horace Mann

Or a newer concept:

"You do not have to be listed in 'Who's Who' to know what's what."
31. Have children interview adults for their reasons for smoking or not smoking.

**RESOURCE GUIDE ON SMOKING AND ITS
RELATIONSHIP TO HEALTH AND DISEASE
FOR SENIOR HIGH GRADES 10, 11, and 12**

To the Teachers:

The evidence that cigarette smoking is linked with certain serious diseases is increasing almost daily. That there is a dangerous increase in the number of junior and senior high school students who smoke is a proven fact. These two facts have convinced most educators that the school has a role in the solution of the problem. The school is the institution which best can hope to influence favorably adolescent behavior and decision making. The school's efforts to produce leaders in citizenship, the sciences, literature, and the arts will go for naught if these leaders are lost due to chronic or mortal illness.

This guide was developed by educators, public health workers, and voluntary agency personnel to assist the schools in meeting this challenge. Its primary purpose is to assist teachers to guide students to see the dimensions of the problem of smoking and to make sound decisions for themselves.

The emphasis in this guide is on the student and his decision. It was not intended that these suggested activities be used to pressure teachers or parents to stop smoking. If any should decide to do so and succeed, this would be an added achievement. Students need to learn, however, that many adults, regardless of knowledge and motivation, may be unable to stop smoking.

The plan for implementing an educational program on smoking must fit the school and the students where it is done. Variability and flexibility are essential. This guide was designed to lend itself to a wide variety of school settings. Instruction on smoking and health could properly fit into many places in the high school curriculum, as indicated in the section devoted to this concern. Efforts should be made to avoid duplication of the same activity, except where planned for a specific purpose, and to reach as many students as possible. If more than one subject area deals with the problem at a given time, as it relates to that subject, this could create a most dynamic learning experience.

The activities, resource and goals suggested in this guide are neither comprehensive nor exhaustive. It is hoped that the creative teachers will use this guide to select those activities which are best suited to his class or, using the guide as a thought stimulator, will think of better activities for his particular group.

TEACHER OBJECTIVES

The major purpose or long-range goal of instruction on cigarette smoking is to influence adolescents toward a decision not to begin smoking or, if they have already begun to smoke, to decide to quit. Research on adolescent learning about cigarette smoking has shown that scare tactics, "preaching," and adult pressure have not been successful in influencing student decisions; however, learning does influence behavior. Keeping in mind those principles of learning set forth previously, a set of immediate objectives has been devised. These

are clearly teacher goals and only become pupil goals through a series of positive, dynamic, and meaningful experiences. These objectives should be viewed as suggestions to the teacher, who may wish to develop his own or modify some or all of these.

It has been said that the primary purpose of instruction on smoking and health is to influence the student to decide not to smoke. This implies that the student must make his own decision. Directly related to this is a second major goal of teaching students to become more self-directed. Smoking instruction should be planned and conducted to give the student a genuine opportunity to make his own decision. Since the behavior desired will be carried outside the school setting, and no force can be exerted, this provides a real challenge to educate for personal decision making.

These objectives have been devised to deal with desired outcomes in terms of knowledge or understanding, attitudes and skills in such a fashion that these would contribute to the desired behavior of deciding against smoking. To this end, the following objectives have been defined:

1. To provide students an opportunity to develop an understanding of current scientific and statistical information regarding the relationship of smoking and health, through a study of the following:
 - a. The anatomical structure and physiological function of the cardio-vascular and respiratory systems.
 - b. The effect of smoking upon the cardio-vascular, respiratory and nervous systems.
 - c. The sociological information on the relation of smoking to illness.
 - d. The economics of smoking, including costs to an individual, national economic influence of the tobacco industry, and insurance costs and economic losses sustained from the fire hazards of smoking.
 - e. The nature (chemical) to tobacco smoke and smoke residue.
2. To assist students to develop an understanding of why people start smoking, including the meeting of social and emotional needs, such as:
 - a. Fulfilling a desire to emulate persons they admire or behavior which they perceive as adult behavior.
 - b. Yielding to peer group pressure and conforming to group standards.
 - c. Achieving status in the eyes of their peers and of younger persons.
 - d. Improving the self-image by behaving in what they believe to be an adult manner.

- e. Rebelling against authority (especially when there are strongly voiced adult objections).
 - f. Experimentation with the unknown and/or with some uncommon experiences.
3. To guide students to an understanding of why people (especially intelligent adults) do smoke or may continue to smoke, including such factors as:
- a. Tobacco smoking is habit-forming. The habit becomes more ingrained with the length of time that the person has smoked.
 - b. Tobacco smoke may produce addiction (at least in some people).
 - c. Tension relief. Absence of an acceptable substitute for manual activity and tension release.
 - d. Rejection of or ignorance of the facts about the health and safety hazards in smoking.
 - e. Identification with a desired social image (i.e., sophistication, masculinity, physical attractiveness, the relaxed person or the more secure person).
4. To assist students to develop skill in evaluation of information about smoking through an understanding of:
- a. Human motivation
 - b. Propaganda techniques.
 - c. Motivation by advertising, especially in cigarette advertising.
 - d. Folklore growth and continuance, especially about smoking.
 - e. Word of mouth as a source of information and a force in human behavior.
5. To develop in each individual pupil a desire to achieve his maximum potential in physical health and attractiveness. This should embrace the desire to:
- a. Be able to participate in a wide variety of physical activities appropriate to his physical make-up and emotional needs.
 - b. Be as physically attractive as his potential allows.
 - c. Be able to achieve his highest vocational achievement.
 - d. Be able, if possible, to achieve his maximum potential as a parent and contribute to his children's health and welfare..

- e. Make his maximum potential contribution to society and to achieve the fullest possible self-realization.

SUGGESTED LEARNING ACTIVITIES

The most important single criteria for selecting learning experiences should be pupil involvement. Since our major aim is to get pupils to make their own decisions not to smoke, teaching should be planned to permit students to share in the decision on the kinds of activities in which they would like to participate.

INTRODUCTORY ACTIVITIES

1. An anonymous survey of the students to learn how many smoke, what they know and think about smoking. This anonymous information would provide beginning material for a class discussion on such subjects as the following: what we know (and don't know) about smoking and health; how we feel about smoking; why we think people start smoking; why we think people continue to smoke; and what part we think advertising plays in teenagers starting to smoke.
2. Presentation of the problem of smoking and health by a resource person from the health department, medical society, tuberculosis association, heart association or cancer society.
3. Presentation of recent film or filmstrip on smoking, such as the filmstrip "To Smoke or Not to Smoke."

OBJECTIVES AND SUGGESTED LEARNING ACTIVITIES

Objective:

1. To provide opportunities for students to develop an understanding of current scientific and statistical information on the relationship of smoking to health.

Some suggested learning activities:

- a. **STUDENT RESEARCH PROJECTS** (either group or individual) to topics, such as: current medical research on smoking and health; statistical evidence on the relation of smoking to illness; current trends in lung cancer, cardiovascular disease and emphysema or other respiratory illnesses; the function of human respiration; a summary of animal research in the effect of tobacco smoke; the physiology of the cardio-vascular system; tobacco and the nervous system; and trends in popular magazine articles on cigarette smoking during the past ten years.
- b. From the research projects a series of class reports should be developed. These may be written (as themes, research reports, etc.) but they should be reported orally also, so all students may benefit from the findings. Such reports might be given as panel discussions, symposia, and individual reports. Time for group discussion and review should follow such reports and involve as many students as possible.

- c. Charts and models of the cardio-vascular, respiratory and nervous system can be prepared by the students. These might be used in conjunction with the reports under "b" above.
- d. A collection of pamphlets, posters, booklets, magazine and journal articles, and related materials can be prepared by students. The materials can be placed in a classroom "smoking library" for circulation to the class. They also may be used to prepare a bulletin board or similar display on the topic.
- e. Carry out a scientific (experimental) research project, such as separating the tars from cigarette smoke; comparing the tars collected from filtered cigarettes with unfiltered ones; comparing the blood pressure and pulse rate before and after smoking. (For information on how to conduct these experiments see Appendix, p. 53).
- f. Debate the issue "Smoking As A Health Hazard".
- g. Make a list of all the serious questions the students can raise about tobacco and health (put them on the black-board) and seek scientifically accurate answers to them, either individually or as a group.
- h. Develop a vocabulary list or glossary of new or uncommon terms which are used in scientific reports about smoking and health.
- i. Invite a representative of the tobacco industry to present a review of their research findings on smoking and health.

Objective:

- 2. To assist students to develop an understanding of why people start smoking.

Some suggested learning activities:

- a. Apply the scientific method or problem-solving approach.

Step (1) DEFINE THE PROBLEM as it is related to the class or to adolescent in general.

Step (2) BEGIN DATA COLLECTION on the problem by surveying the class attitude toward, and their beliefs about, the effects of cigarette smoking and the reasons they believe people (especially adolescents) begin to smoke. Students also might survey the attitudes and habits of their fellow students, if this has not been done. Care should be exercised to see that results of surveys are as reliable as possible.

The students then would collect reports of research by psychologists and sociologists on the actual reason why adolescents start to smoke. Current research indicates that these would likely include:

Identification with parents who smoke. Desire to appear adult or more adult. Belief that a person who smokes is sophisticated, physically attractive and/or masculine. Identification with leaders, especially in athletics, entertainment and business, who smoke or advertise cigarettes. Desire to enhance one's self-image by appearing more adult. Status seeking, including both adult and peer group approval. Seeking peer group approval by conforming to group standards. Rebellion against authority. Smoking provides an outlet for an overt act of defiance of the law, parent objection and teacher opposition. Experimentation, a desire to try out a different or unusual experience.

Step (3) ANALYZE THE FACTS (and opinions) collected. Students could spend considerable time sorting out and grouping facts and learning to separate fact and opinion.

Step (4) DRAW CONCLUSIONS from what has been found. This is the individual decision-making point. Students assure themselves that conclusions are sound, but they also should be sure the conclusions are those of the students (not the teacher's to which they have acceded).

- b. Write an article or a series of articles on "why students smoke" for the school paper.
- c. Invite the school psychologist (or psychology class) to help explore the psychological basis for smoking (this could be part of Step (2) of 'a' above). Students also could explore the psychological and motivational factors in helping or persuading people to stop smoking.
- d. Art classes or students who possess artistic talent could do illustrations of the reasons why people start smoking. These could be used in a schoolwide campaign.
- e. Role playing of some smoking decision situations, such as:
 - 1. A gang wants a non-smoker to join them for a smoke or to try his first smoke.
 - 2. A home situation where son or daughter announce to his parents that he is going to or has begun smoking.
 - 3. A student explains to his parents (assuming they do not have the facts) why they should not smoke.
- f. A student might take the information on smoking, and why people start to smoke, home and discuss it with his parents and report back on their feelings about smoking.

Objective:

- 3. To guide students to an understanding of why people continue smoking regardless of contrary research findings. It is very important to distinguish between the problems of the

continuing smoker and the beginning smoker. Care should be exercised to avoid pointing an accusing finger at the teacher or parent who continues to smoke in the face of contrary research evidence.

Some suggested learning activities:

Most of the suggested activities under Objective 2 also will be appropriate to this objective. The activity will be listed again in most cases, but in less detail.

a. Use the **problem-solving** approach.

Step (1) Collect data on the problem. Include such facts as the smoker's need for a tension outlet and the lack of a suitable substitute; people who reject the research findings on the ill effects of smoking; the possibility of addiction by some people; that tobacco smoking is habit forming; that many people are still uninformed about the facts regarding the dangers of smoking; that some people are unaware of the extent of fire hazards in smoking; the fact that some people feel a "need to smoke" to appear sophisticated "people of the world." A psychologist or psychiatrist could help here in explaining the effect of long established habit or addiction on an individual and the problems related to breaking such habits.

Step (2) Analyze what has been learned about the problem.

Step (3) Draw conclusions about why others who "know better" may continue to smoke and what this means or may mean for the students in the class.

b. Role play situations related to continuing to smoke, such as the following:

1. The student goes home and tells his parents they should stop smoking.
2. A physician explains to his patient why he should stop smoking after 20 years and they face the problems he will have in quitting.
3. Role play the life situation of the same man after 20 years, when he did smoke for 20 to 40 years and when he did not, to try to portray some probable effects of the decision "to smoke or not to smoke."

c. Write an article for the school paper to explain why adults who have smoked for years may not be able to stop smoking.

Objective:

4. To assist students to develop skill in evaluation of advertising and other information about smoking.

Some suggested learning activities:

- a. Do an analysis of cigarette advertising. Make a collection of cigarette advertisements from magazines, newspapers, radio and television (the latter two might be tape recorded at least for the sound portion) for class use. Try to determine what they claim for their product.
- b. Make a list from books on the topic or other sources of propaganda techniques. Try to see which of these are employed in cigarette advertising.
- c. Make a study of "depth approach" techniques in advertising based on motivational research. Vance Packard's **The Hidden Persuaders** provides a useful source for identifying these techniques. Cigarette advertisements then can be analyzed to see to which of these motivational impulses they appeal.
- d. Hold a discussion with students on how masters of propaganda and motivational research seek to control their decisions.
- e. Let students analyze and write a brief report on "How I Make Important Decisions." These could be shared in class. If embarrassment would result, they could be kept anonymous.
- f. Have students report or make a list of all the "things they have heard" about the value or effect of smoking and analyze these in class to determine their reliability. Discuss word-of-mouth as a source of information, and the refusal of courts to admit hearsay information as legal evidence.
- g. Get a person from an advertising firm to visit the class as a resource person and explain the techniques used to get people to purchase the products they advertise.
- h. Have a student or a group of students research the laws regarding the sale of tobacco to minors and prepare a written or oral report to the class on the topic "Laws—Do They Really Help?" or "Does a Law Produce Desired Results—Why or Why Not?"

Objective:

5. To develop in each pupil a desire to achieve his maximum potential in physical health and attractiveness.

Some suggested learning activities:

- a. Investigate reliable published information on the relationship of smoking to physical fitness.
- b. Invite the athletic coach or physical education teacher to discuss the topic "Why I Prefer My Athletes Not To Smoke."

- c. Invite the homemaking teacher to discuss the topic of "grooming and nicotine stains," "social problems related to smoking," or "smoking hazards in the home and at social gatherings."
- d. Have a group or individual prepare a report on a summary of research on the effect of a mother's smoking on her children's health.
- e. Make a list of vocational and professional positions where smoking would be a handicap or might prevent the person from being employed.
- f. Encourage the class to list those effects or characteristics of smoking which make the smoker less attractive or a less desirable companion.

PLACEMENT IN SENIOR HIGH CURRICULUM AND SUGGESTIONS FOR INCLUSION OF SMOKING EDUCATION

Opportunities for teaching about smoking and its relationship to health and disease exist in many places in the high school curriculum. While some schools teach a course in health, many do not. The following are some suggestions on appropriate places in the curriculum to include instruction about smoking:

BIOLOGY

The scientific information on the effect of smoking on the psychology of the cardio-vascular, respiration and neurological systems.

SOCIOLOGY OR PSYCHOLOGY

Study advertising and motivational research and their use in cigarette advertising. Study the forces which cause people to smoke. Explore the smoking controversy.

GOVERNMENT — ECONOMICS — AMERICAN PROBLEMS AMERICAN HISTORY

Study the economic impact of the tobacco industry in North America in agriculture, processing, distribution and sales, taxes and advertising. Study the role of the U. S. Government in financial support of research on smoking and health and in financial support of tobacco farming. Study the economic impact of fires caused by smoking, and the personal cost of smoking.

CHEMISTRY

Review the chemical processes in the body and the scientific evidence on the effect of smoking on such factors as oxygen use and carbon dioxide exchange. Write a research paper on a review of the research related to the effect of smoking on body chemistry.

PHYSICAL EDUCATION — HEALTH EDUCATION

Study the effects of smoking on athletic participation as viewed by leading physical educators, coaches, athletes and physiologists. Such topics as fitness and smoking, physiological effect of cigarette smoking, smoking and relationship to exercise, and smoking and body care are appropriate to the goals of physical education or health education.

ENGLISH — SPEECH

Use of topics such as "Cigarette Smoking and Health" and "Cigarette Smoking and Disease" for essay themes or speech topics for research by interested students. Encourage students to read and evaluate current popular magazine articles, books and pamphlets on the topic.

ART

Students in art classes, especially commercial art and graphics, can do posters and illustrations on cigarette smoking, especially for school-wide campaigns.

FAMILY LIVING — HOME MAKING

The cost of cigarettes and the family budget, relation of smoking to maternal and infant health, home safety hazards in smoking, and similar topics are appropriate to the family living classes.

MATHEMATICS

A study of smoking and health can involve many problems in mathematics, such as finding the percentages of students who smoke in each grade, by sex, or for all grades in the high school (this could be based on a sampling in some grades or a school-wide survey); a survey of a sampling of classes, then working out a probability curve for the probability of a given high school student becoming a smoker; graphing the smoking rate by grade levels or by age groups; studies of the cumulative costs of smoking; costs of fire losses due to cigarette smoking.

INDUSTRIAL VOCATIONAL EDUCATION

A study of the relationship of smoking to industrial safety, smoking as related to the productivity of workers, smoking as a barrier to certain types of employment.

There are also some extra-curricular or co-curriculum areas of the high school programs that provide excellent opportunities for educating students about smoking.

STUDENT COUNCIL

School-wide smoking surveys or smoking education campaigns can be conducted. The Student Council also can lead in establishing school rules regarding smoking.

SCHOOL NEWSPAPER

Can carry a series of student-written articles or cartoons on cigarette smoking and health.

LIBRARY

Display of the latest books, magazine articles and pamphlets on cigarette smoking.

GUIDANCE

The guidance service should review with the students the possible adverse effects of smoking on certain vocational goals, the impression that the heavy smoker may make on a prospective employer.

CLUBS

Future nurses' clubs, lettermen's clubs, business or advertising clubs, and other related school activity groups may wish to plan programs and activities for their own members or for school-wide activities.

SAMPLE LESSON PLANS

LESSON 1

The History of Tobacco

1. Columbus found Indians using tobacco when he arrived in the New World.
2. In 1568 Spaniards found the plant in TOBACCO, a Yacatan province—hence the name.
3. Raleigh, Drake and Jean Nicot (after whom nicotine was named) carried tobacco to Europe and helped popularize the habit.
4. Indians believed tobacco had medicinal value and smoking the "peace pipe" was a sign of good will.
5. In 1619, ten tons of tobacco were shipped from Jamestown to England, their major export.
6. Benjamin Rush, a physician and signer of the Declaration of Independence, opposed tobacco for health reasons.
7. At one time, Pope Urban VIII threatened excommunication for anyone smoking on church property.
8. World War I created many smokers.
9. Pipes, cigars, chewing tobacco, and snuff were most popular forms of tobacco up to World War I.
10. Just prior to World War I cigarette making machines were invented.
11. The public trend to cigarette smoking started in 1920 as a result of intensive advertising.
12. Women began to smoke in public at about the time of World War I.
13. Cigarettes, unknown in 1916, became so popular that by 1954 eighty per cent of tobacco was used in cigarettes.
14. Types of tobacco:
 - a. Burley (Kentucky, New England, Canada) high in nicotine-6-8%.
 - b. Bright leaf (North Carolina & South Carolina) 2-4% nicotine.
 - c. Turkish tobacco - 2-4% nicotine.

LESSON 2

Chemical Composition of Tobacco and Industrial Use of These Chemicals

1. Some 150 substances have been identified when tobacco is burned, the most important of these is nicotine.
 - a. In a 40 per cent solution this is in industrial insecticide (Black Leaf 40).
 - b. Two drops of liquid nicotine on the gums of a small dog will generally produce death. This represents less nicotine than is in one package of cigarettes.
 - c. Nicotine seems to produce a stabilizing and calming of nervous equilibrium and a reduction of fatigue and discomfort. Most studies indicate that this effect is harmful rather than beneficial.
 - d. In animals nicotine disturbs reproduction and the growth of the young is retarded.
2. Among other substances are:
 - a. Aldehydes - these are used as industrial preservatives.
 - b. Ammonia - an extremely poisonous element.
 - c. Arsenic — an extremely poisonous element.
 - d. Benzpyrene - a cancer producing agent.
 - e. Carbolic Acid - a powerful antiseptic, disinfectant, and germicide that is extremely poisonous.
 - f. Carbon Dioxide - odorless, colorless gas.
 - g. Carbon Monoxide - colorless, odorless, poisonous gas.
 - h. Formaldehyde - an embalming agent.
 - i. Formic Acid - blistering agent and a counter irritant.
 - j. Hydrocyanic Acid - extremely poisonous gas which checks the oxidation process in protoplasm - used in gas chambers.
 - k. Methane - a marsh gas.
 - l. Methanol - alcohol (wood alcohol); sufficient quantity causes intoxication, blindness, coma, and even death.
 - m. Pyridine - a coal tar solvent.

LESSON 3

Tobacco And Our Economy

Lesson 1 portrayed the history of the tobacco plant and the history of addiction to it. In this lesson we will look at the role of tobacco in our economy.

While encouraging the students to develop a full understanding of the important role that tobacco, its processing, distribution, and advertising play in our economy, we are again exposing them to the facts which they might encounter that are not pertinent to the specific topic, but will become part of their knowledge of tobacco and hopefully will play a part in their decision regarding smoking.

- a. The growth of importance of tobacco in our economy can be studied from the ten tons exported from Jamestown in 1619 to the present time.
- b. Tobacco as a replacement for cotton in the "one crop" agriculture of the South, places it as an important part of our economy.
- c. The part that tobacco now plays in our total agricultural program compared to what it was in previous years.
- d. The important role that tobacco plays in our advertising economy today.
- e. The part that tobacco plays in federal, state, and local taxes is impressive.
- f. The development of federal subsidies to protect tobacco growers.
- g. The role of the redistribution and processing of tobacco in cigarettes as it affects gross national product.

LESSON 4

Why People Smoke - Social and Psychological

1. In order to give the broad comprehensive look at the smoking habit, a survey of why each student's particular circle of contacts or friends smoke would point out to him that there is no good reason for smoking.
2. It would be interesting to have the students try to group these reasons into social and psychological bases and to evaluate each of them to see whether any scientific merit substantiates the validity of this reason.
3. Have a psychologist discuss these reasons with the students and give the class the validity he would put on these reasons.
 - a. As discussed earlier, nicotine seems to produce a stabilizing and calming of the central nervous system and a reduction of

fatigue or discomfort. This is one of the reasons for smoking but as discussed earlier, analysis indicates that this is harmful rather than beneficial.

- b. The strongest reason people continue to smoke is habit.
- c. A desire to emulate someone who is admired and respected.
- d. Peer group pressures and group standards.
- e. To achieve status in the eyes of peers and of younger persons.
- f. Ego satisfaction - to appear more adult.
- g. Experimenting with the unknown and desire for new experiences.
- h. Because parents make it extremely easy.
- i. Because of the lure of advertising.
- j. Some pleasure which is derived.

LESSON 5

Early Effects on the Body From Smoking

1. This might be a good time to have the athletic coach or a physician discuss the problems of smoking with the students.
2. Investigate vocations and professions where smoking would be a handicap.
3. The students might list the effects and characteristics of smoking which make their companions more or less acceptable to them.
 - a. Irritation in the mouth and lungs.
 - b. Nicotine can cause functional changes in circulation which resemble organic heart disease.
 - c. Heart rate may change markedly, especially before tolerance develops.
 - d. Blood pressure, usually as a result of the heart rate, will change correspondingly.
 - e. Constricted blood vessels also effect blood pressure.
 - f. The presence of heart disease symptoms may be exaggerated by smoking, including pain. (effect on vagus nerve)
 - g. Secretion of acid gastric juices may increase.
 - h. There is generally a loss of appetite, alternate constipation and diarrhea, and frequently a loss of weight.

- i. Shortness of breath.
- j. Stimulation of the respiration.
- k. Temperature changes.
- l. Decrease in the volume of air which the lungs exchange during respiration.
- m. Change in rate of secretion of saliva.
- n. Development of habituation.

LESSON 6

Long Range Effects of Smoking

1. This is probably the most important lesson in conditioning the student not to develop the habit. The diseases that smoking is suspected of causing are numerous and it would require a full class period to enumerate and discuss them.
2. This is another splendid opportunity to introduce to the class a physician who is learned in this subject and can discuss it with them.
3. The report of the **Royal College of Physicians and Surgeons** lists many factors that they have attributed to cigarette smoking and the report of the **Surgeon General's Committee** also lists many possible effects of smoking.
4. Using the smoking machine previously described, it can be demonstrated that a goldfish or guppy will become seriously affected by the nicotine in the water and will eventually die.
5. The studies that have been done showing the mortality figures among smokers as compared to non-smokers is particularly revealing and should be of interest to everyone.
6. No method of treating tobacco has been developed that materially reduces or eliminates the hazard of lung cancer.
 - a. shortness of breath.
 - b. Possible effects on growth.
 - c. Ingrained habit is almost impossible to break.
 - d. Possible tension outlet.
 - e. Fire hazard involved.
 - f. Development of emphysema.
 - g. Development of circulatory disorders such as Buerger's disease.

- h. Exaggeration of cardiac disorders and of pain that may be of an organic nature.
- i. Mothers produce less developed babies at birth.
- j. In addition to lung cancer, cancers of the mouth, larynx, lips, tongue and throat.
- k. Deterioration of blood vessels due to increased pressure caused by smoking as well as changes in the circulation.
- l. Chronic cough, unpleasant odor of tobacco on breath and clothes.

LESSON 7

Smoking and Lung Cancer

- 1. The statistics are overwhelming here and should be hammered forcefully to the class.
- 2. To make the experience more traumatic, which will stay with them longer, films on this subject might well be utilized. There are many interesting films on the subject. (If you feel a traumatic experience is not the best method of learning, you might be interested in knowing that at a recent conference of junior high school students, the second most common recommendation they had for improving the conference was "show us more graphic and shocking films.")
- 3. Most thoracic surgeons would be more than happy to discuss this subject with the students.
 - a. The report of the **Surgeon General's Committee** left no doubt of the relationship between smoking and lung cancer. For those who smoke less than half a pack a day, the death rate is 7 times as great as for non-smokers. For smokers of two packs or more a day, the death rate is 20 times as great. The lung cancer death rate is 10 times that of 30 years ago. Approximately 50,000 Americans die a year, usually during the peak years of earning and family responsibility. By the time the active symptoms appear; the disease is far advanced. Treatment consists of removal of all or part of the lung with about one chance in 20 of cure.
 - b. Cigarette filters do not remove any relatively important amount of tar or nicotine.

LESSON 8

Other Effects of Smoking on the Circulatory, Respiratory, and Central Nervous System

- 1. The works of Dyle, or those of Hammond and Horn are available in reprints that are readily obtained through your health agencies of the government for distribution.
- 2. Both the **Royal College** and the **Surgeon General's** reports should be utilized in this phase of study.

- a. Emphysema is a relatively little known disease but very serious. A study of the disease entity will show that the greatest cause is smoking.
- b. One of the first things generally prescribed following a heart attack is "stop smoking".
- c. There is a 60 per cent higher death rate from all cardiovascular diseases among smokers.
- d. There has been so much research published on this effect on respiratory, cardio-vascular, and central nervous systems that they easily merit extensive library work or distribution of such information to the class.

LESSON 9

Study of Advertising

1. The importance of advertising of tobacco products is an enlightening study. The amount of television that has been brought to us by "cigarettes"—usually programs directed toward youth—is amazing.
2. The fact that smoking contributes nothing to our welfare, and yet it has been promulgated by advertising to the point where the vast majority of our citizens smoke, can lead to interesting discussion in a classroom. Is advertising solely responsible? What other factors could enter into this growth?
 - a. Cigarette advertising seems directed principally at youth.
 - b. The possible harmful and injurious effects of smoking are never referred to.
 - c. The use of athletes and well-known personalities to inspire hero worship among the young is apparent in advertising.
 - d. Arthur Godfrey, Edward R. Murrow, and others who have been associated with advertising of tobacco and tobacco products and the story of their subsequent surgery for lung cancer should be of interest.
 - e. Analyzing advertising to see exactly what it does say would lead to interesting conclusions.
 - f. Advertising regarding filters and comparison with experiments using filter cigarettes should show the "truth" of their effect.
 - g. How advertising converted our country from pipes and cigars to cigarettes is a strange phenomenon.
 - h. Athletes and prominent persons who pose for ads but do not smoke is an interesting observation.

LESSON 10

Ease of Starting, Difficulty of Stopping

- a. In earlier stages of smoking the habit is more easily broken. For an adult it is very difficult and sometimes impossible to break the habit.
- b. Some persons afflicted with complete breakdown in the circulatory system which are aggravated by cigarette smoking to the point gangrene occurs, find it impossible to stop even though they know that the cigarette is causing further damage.
- c. Smokers who give up the habit decrease their chance of getting lung cancer and other afflictions.
- d. Programs aimed at breaking the habit are not particularly successful. A psychological program conducted by the Seventh Day Adventists is being widely presented throughout the country. The story of this would make an interesting report for the class.
- e. Substitutes such as bantron, nikoban, etc. are being extensively sold but results are very disappointing. **Note:** This is probably one phase that could best be discussed by a physician or a psychologist—the problem of overcoming the addiction. Most confirmed smokers experience a great deal of difficulty in withdrawing. Some symptoms of withdrawal can be headache, nausea, forgetfulness, and ravenous appetite.
- f. The history of state laws in this country which ban providing or selling cigarettes to minors and the spread of that from state to state would be an interesting study.
- g. The activities of other countries in trying to break the habit of smoking among their citizens is interesting. Italy allows no advertising. England, Norway, Sweden, Holland, Canada, and Australia have issued governmental warnings against cigarette smoking, or have actually taken steps to curtail cigarette smoking among teenagers.
- h. A survey of confirmed smokers on "Why they smoke?", "Why they started?", and "How difficult the habit is to break." would be enlightening to some of the class.

LESSON 11

Decision to Smoke or Not to Smoke

(A review of the course)

Preparation for an examination on this subject, as well as an aid in deciding whether the individual will acquire the habit should be indicated at this point.

- a. A list of the logical reasons for and against smoking should indicate that the habit is harmful to health and should be a good classroom project.

- b. It would be interesting to find out what phases of the programs have made the greatest impression on the students.
- c. The American Cancer Society has produced some films and filmstrips on this subject which would be helpful.
- d. Students should be encouraged to take a strong stand against smoking. At this point the student might accept the challenge of how to prevent his classmates from smoking; also his schoolmates, his parents, the PTA, or the community.

LESSON 12

Evaluation or Test

In order for this course to be effective it must be treated as seriously as any other subject the student is taught.

Most of the other courses are tools to aid the student in career development, while whether the student smokes or not can decide whether he will have need to plan a "career." Do not let the student think that this is a course designed to keep him occupied—treat it seriously.

Sufficient material has been presented if this guide has been followed for an exhaustive examination. The student's score is relatively unimportant, but his decision will mean a minimum of four and a half years in the life of an average high school student.

Note: Use Thompson Test

GROWTH AND DEVELOPMENTAL CHARACTERISTICS OF ADOLESCENTS

This guide cannot begin to cover the significant characteristics of the "typical" adolescent. It is doubtful that any such exists. The following characteristics have been selected because they seem to have a bearing on the student's decision about smoking. The wide variability in these students, often referred to as individual differences, dictates that this list will not describe all individuals. Most of these characteristics are what are usually found in a large group of adolescents.

Adolescent Characteristics

1. The adolescent is unsure and uncertain of himself as he tries to break away from the comfortable patterns of his childhood.
2. The adolescent exists in a "neither world," where he is neither child nor adult. He often ventures into adult situations and, when things go wrong, retreats into the child role.
3. Adolescents recently have sustained and/or are experiencing great physical growth. They often find effective use of their bodies still awkward and difficult.
4. The adolescent continuously seeks peer group acceptance, which he attempts to achieve through conformity in dress, speech and general behavior.
5. Introspection growing out of a serious over-concern about himself is common. The most frequent question asked by him is "Am I normal?" or "Is it normal to feel like I do?"
6. A serious concern about his body is typical of the adolescent, and blemished and minor imperfections take on great significance.
7. The adolescent is concerned and anxious about his role in the family, his sex role, and his relationships with the opposite sex.
8. Change is perhaps the one characteristic of adolescents which is constant. Their physical, emotional and social maturation make "new people" of them with amazing rapidity.

Adolescent Needs

The needs of adolescents will in many instances be very related to their maturity. The relationship of needs to growth and developmental characteristics is apparent. The needs listed here are among those which might be most useful to consider in planning for cigarette smoking education.

1. Group status is central to the adolescent need for acceptance. He needs a group to which he can give loyalty and from which he can receive support.
2. Adults with whom he can identify and to whom he can turn for a serious discussion of problems which concern him. This is often a listener not a critic.

3. Recognition needs are paramount during the "teen years." The adolescent needs to be singled out for his worthiness and importance as a person.
4. Achievement and a high estimate of self-worth are closely linked. The adolescent can accept himself best when he has made significant achievement in an adult role.
5. A sense of independence and self-direction is sought by the adolescent. He needs to be able to identify some important areas where he can make his own decisions.
6. Acceptance and approval by parents, teachers, peers and others provide the essential food for the adolescent ego.
7. The adolescent needs evidence that he is attractive to the opposite sex. He needs to feel adequate and secure in his masculine or feminine sex roles.
8. When he behaves like a child, the adolescent most needs to be treated like an adult.
9. There is a need for adult or authority figures to set limits so he can define the areas where he may make decisions and those where he may depend on others.

Student Interests

"Should I smoke?" is a big question for every adolescent.

Pupil interest is clearly central to the learning situation. If the pupils show no interest in a topic like smoking, it may be that they have already come to a decision about smoking and do not wish to risk having their rationalization or conclusions upset. They may be saying, like that humorous motto, "Please don't confuse me with the facts—I've made up my mind." A teacher who confronts this situation may be forced to devise subtle means of getting the topic before the class in order to reopen the issue.

Several studies have been made of the major health interests of adolescents. The study done by the Denver Public Schools ten years ago revealed that almost 90% of ninth grade boys and over 50% of ninth grade girls would like to study the effects of tobacco on the body. The same study showed that about 80% of eleventh grade boys and an equal percentage of tenth grade girls would like to see a movie on the effects of cigarette smoking on growth. In a study done by Joseph Lantagne of some 10,000 high school students in ten states, it was indicated that the five highest interest areas, in order of preference, were as follows:

- *1. Habit-forming substances
2. Safety
3. Family health
4. Mental health

5. Exercise and body mechanics

In this same study, an analysis of specific interest items, out of 300 possibilities, revealed the top ten to be the following:

1. Sex instruction
- *2. Cancer
3. Juvenile delinquency
4. Causes of suicide
- *5. Tobacco and human health
6. Problems of tooth decay
7. Causes of mental illness
8. Care of the eyes
9. The safety age to have a baby
10. How to use a gun properly.¹

The starred items reveal the high interest level in smoking and related topics. Evidence of interest in an area is no guarantee of sustaining or continuing that interest. The activities and experiences which occur in the classroom will govern whether interest builds or lags. If pupils are permitted to help plan the learning experiences, the chances are greater that interest will be sustained.

At the present time, Spokane, Washington, long a leader in an anti-smoking campaign among students, uses a powerful new weapon—the pupils themselves. Approximately 20,000 pupils are to be exposed to the program. A pamphlet for parents is being prepared. It points out that a good example is the best weapon, and that parents should be honest with their children on the subject. It cautions that the child must be allowed to make his own decision, or rebellion is almost certain.

1. Joseph E. Lantagne, "Health Interests of 10,000 Secondary School Students" Research Quarterly, October, 1962, 300-46.

VOCABULARY LIST

- ADDICT** - one who devotes himself to a habit.
- AIR POLLUTION** - matter that gets into community air as a result of activities of man.
- ALVEOLI** - tiny air sacs at the end of each bronchiole in the lungs.
- BRONCHI** - one of the smallest divisions of a bronchial tube.
- BRONCHITIS** - irritation or inflammation of lining of the bronchial tubes.
- BURGER'S DISEASE** - a disorder in which blood vessels of arms and legs are irritated and inflamed causing poor circulation. Smoking appears to cause inflammation of the vessels.
- CANCER** - any malignant tumor.
- CAPILLARY** - smallest of the blood vessels.
- CARBON DIOXIDE** - gaseous waste material given off by the body.
- CARBON MONOXIDE** - colorless, odorless, poisonous gas.
- CARCINOGEN** - a substance or agent causing development of cancer.
- CARCINOMA** - a tumor which is malignant.
- CARDIO-VASCULAR** - pertaining to the heart and blood vessels.
- CELLS** - unit of structure of living matter.
- CHRONIC** - continuing for a long time.
- CILLA** - tiny hair-like processes found in various parts of the body that help propel fluids.
- CIRCULATORY** - pertaining to circulation, the act of moving around or passing from place to place; movement of blood through the vessels of the body.
- COMMERCIALS** - modern form of advertising.
- DIAPHRAGM** - muscular partition located at the bottom of the chest cavity and used in breathing.
- ECONOMICS** - pertaining to the earning, distributing and using of wealth and income.
- EMPHYSEMA** - Greek word meaning "inflation," swelling or inflation of tissue to presence of gas; over inflation of the alveoli.
- EXHALE** - to breathe out.

FILTER - a porous material used to remove impurities; used in cigarettes to help remove tars.

INHALE - to breathe in.

LUNG - one of the two organs of breathing, to which the blood gives up water and carbon dioxide and receives oxygen.

LYMPH - the clear watery fluid in lymph vessels.

LYMPH NODES - gland-like structures in the lymph system that make lymphocytes (one type of blood cell) and filter lymph.

MUCOUS - a sticky liquid secreted by mucous glands.

MORTALITY RATE - number of deaths from a specific cause.

NICOTINE - a poison found in the leaves of tobacco plant and responsible for some of the effects of tobacco.

ORGANISM - anything that has life in itself.

OXYGEN - a colorless, odorless, gaseous element constituting about one-fifth of the total volume of the atmosphere.

PHAGOCYTES - white blood corpuscles or cells that are especially active in destroying germs.

PHYSIOLOGY - that part of biology concerning the function of the human body; science that deals with the functions of living organisms and their parts.

POISON - a substance which if introduced into a living organism destroys life or health.

DEMONSTRATIONS FOR SMOKING MACHINES

1. "Smoking Machine" (Consult science teacher if needed)

a. Equipment and supplies:

large gallon jar with a two-hole stopper
cigarette holder
cigarettes
vacuum pump
delivery tubes

b. Procedure Time - 15 minutes

assemble cigarette separating apparatus as shown in diagram.
fill the gallon jar half full with water

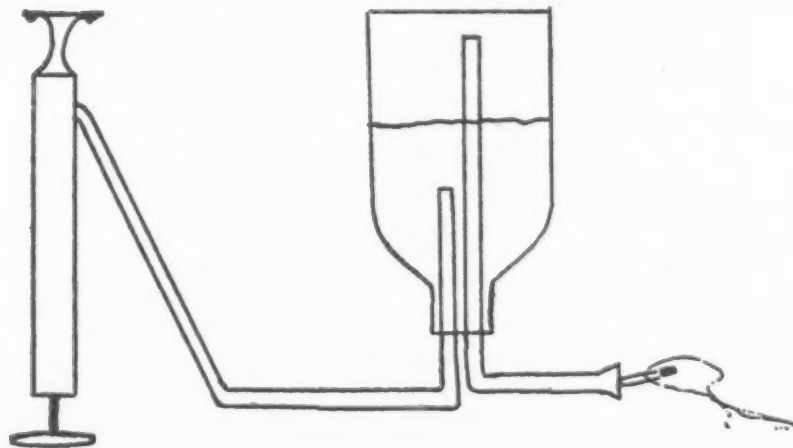
place cigarette in intake and light

pump vacuum pump so as to draw smoke from cigarette into
gallon jar and water

pump until cigarette is burned completely.

Replace with additional cigarettes until tars can be seen
in water.

have pupils examine color of water, smell and taste the
liquid. Pupils will draw conclusion regarding cause and
effect relationship.



2. "Tissue Paper Smoke Collection" (Experiment will show tars in cigarette smoke as filtered by tissue.)

a. Equipment and supplies:

handkerchief or facial tissue
cigarettes

b. Procedure Time - 5 minutes

have adult smoker do demonstration

without inhalation of cigarette smoke, smoker will blow smoke through a tissue

with inhalation, the smoker will blow smoke through another tissue

compare amount of tars in the two different tissues

3. Compare Filter and Non-filter Brands

a. Procedure

repeat preceding experiments making a comparison between filter and non-filter cigarettes

4. Collection of Tar Residues

Set up a smoking device such as the one shown in Figure 1. "Smoke" several cigarettes to find the amount of tar-like substance that collects in the Y-tube. Repeat, cleaning Y-tube each time, using cigars and a pipe.

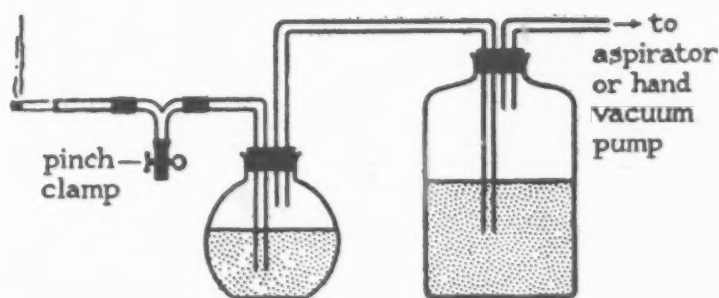


Figure 1

Set up filter apparatus such as that shown in Figure 2. Moisten filter paper and place in funnel. Grease may be used to seal the lid or cover on the funnel. Glass tubings is slipped through a small hole in the plastic cover.

Pass smoke through the filter paper and note tar residue left on the paper. Use several layers of filter paper, also filter paper with different sized pores. Direct flashlight beam on the contents of the filter flask and observe the smoke particles that passed through the filter paper.

Use filter apparatus to "smoke" several brands of regular cigarettes, filter cigarettes, a pipe and a cigar, changing the filter paper each time.

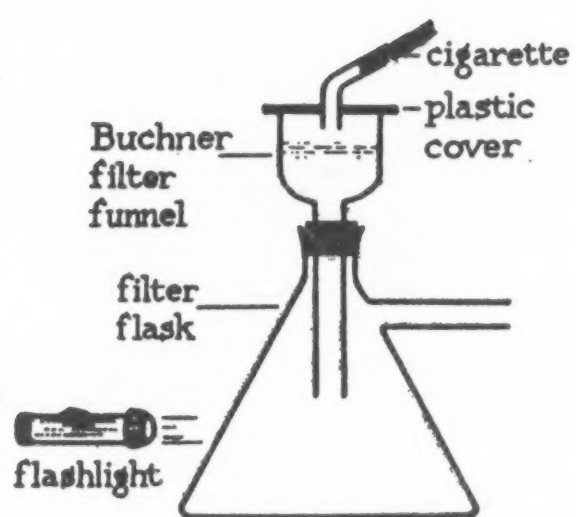
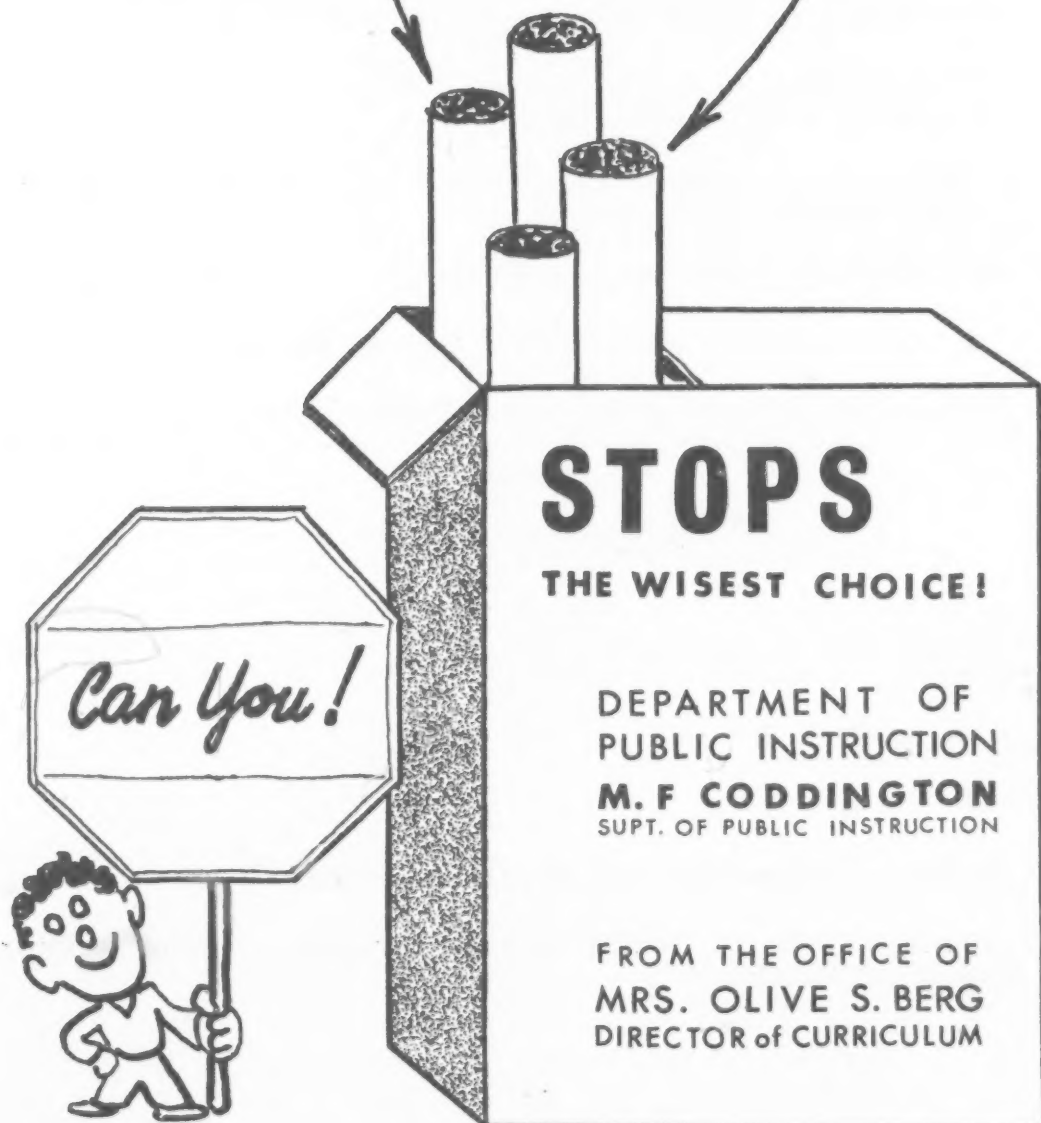


Figure 2

For fitness sake

**APPENDIX AND
KEY FACTS...
PART - FOUR**



APPENDIX

Questionnaires

The following two questionnaires are examples of surveys that may be used to evaluate students' knowledge and attitudes of smoking. The first one is factual, while the second one is designed to show your student's background and attitudes in relation to smoking.

QUESTIONNAIRE I

1. How does smoking effect the heart rate:
Increase-----Decrease-----No effect-----
2. How does smoking effect body temperature:
Raise-----Lower-----No effect-----
3. How does smoking effect blood pressure:
Increase-----Decrease-----No effect-----
4. Is the risk of lung cancer less for ex-smokers then for smokers?
Yes-----No-----
5. Name two respiratory diseases (diseases of the breathing system) other than lung cancer that are related to smoking.
6. Name 3 substances found in tobacco smoke, which are known to be harmful in large quantities.
7. Why do athletes endorse smoking in advertisement although they are not supposed to smoke?
8. Does smoking contribute to nervousness ---- or to relaxation ----?
9. Explain the effect of smoking on the growth process.
10. Explain the effect of smoking on stomach ulcers.

Answers

QUESTIONNAIRE I

1. Increase
2. Lower
3. Increase
4. Yes
5. Pulmonary emphysema and chronic bronchitis
6. Ammonia, carbon monoxide, hydrogen cyanide, nicotine, pyridine, formaldehyde, arsenic.

7. They get paid for it.
8. Nervousness
9. It effects the appetite which in turn effects body growth.
10. Smoking does not cause ulcers, but it irritates them and interferes with the healing process.

EVALUATION

If you would like to get a rough idea of any change in student's smoking habits, you could:

- a. Give the questionnaire to class members who will be receiving information on smoking.
- b. At the same time, have the questionnaire given to a comparable group of students who will not be receiving any information on smoking. This "control group" should be of the same grade and comparable in general scholastic level. It would be helpful to use some code to identify the control group such as "C" in the upper right-hand corner.
- c. Tabulate both sets and record results, computing the percentage of smokers by class and by boys and girls.
- d. At the end of the semester, give each group a second questionnaire.
- e. Tabulate both sets.
- f. Compare the degree of change between members of the sample group and those of the control group.

By using the control group as the "norm," you can compute the expected change during the semester. Any major deviation from this in the sample group could be attributed to the information on smoking.

Under the procedures outlined, this is admittedly a very rough gauge of possible change, but valid within limitations and should be of interest to students and teachers.

QUESTIONNAIRE II

TO THE STUDENT: This is a survey on smoking among the students in the junior and senior high schools. We ask that you complete this form with honesty, neither holding back nor exaggerating the facts that pertain to you; only through your truthfulness will we be able to secure a report that will be of value to all of us.

THIS SURVEY IS PREPARED so that you **cannot** be identified as an individual. Please do not write your name on these sheets. Simply place a check (✓) in the appropriate space that refers to you.

1. I am a Boy _____; Girl _____
2. I am in Grade 7 _____; 8 _____; 9 _____; 10 _____; 11 _____; 12 _____
3. My age is 11 _____; 12 _____; 13 _____; 14 _____; 15 _____; 16 _____; 17 _____; 18 _____; 19 _____;
4. Have you ever played on an athletic team, either in school or outside school _____ Yes _____ No _____
 - a) If your answer is YES, did any of your coaches advise you not to smoke during the season? _____ Yes _____ No _____
5. When you see advertisements in magazines, or commercials over TV, of famous athletes smoking cigarettes, do you feel that if he smokes it must be all right? _____ Yes _____ No _____
6. Did you know that cigarette smoking may contribute toward:
 - a) Lung cancer and other chronic lung disease? _____ Yes _____ No _____
 - b) Stomach ulcers and other digestive ailments? _____ Yes _____ No _____
 - c) Heart disease and hardening of the arteries? _____ Yes _____ No _____
7. Does information in question 6 influence you not to smoke? _____ Yes _____ No _____
8. Does your father smoke? _____ Yes _____ No _____
9. Does your mother smoke? _____ Yes _____ No _____
10. Does an older brother smoke? _____ Yes _____ No _____
Have no older brother _____
11. Does an older sister smoke? _____ Yes _____ No _____
Have no older sister _____
12. Have you ever smoked, even once? _____ Yes _____ No _____
 - a) If your answer is YES, please check about how many times you have smoked:
 _____ only once
 _____ less than 10 times
 _____ more than 10 times
13. Do you smoke now, as a matter of regular course? _____ Yes _____ No _____
If your answer is yes then answer the following questions:
14. Do your parents know you smoke? Yes _____ No _____ I don't know _____
15. Do your parents approve of your smoking? _____ Yes _____ No _____
I don't know _____
16. At what age did you start to smoke regularly? _____
(Please write figure)

17. How many cigarettes do you smoke **per day**?

1-5_____

Half pack_____

One pack_____

More_____

18. Why do you smoke? (It is possible that more than one reason may be checked.)

_____ Because my friends smoke

_____ Because it seems to be "the thing to do" at my age

_____ Because my friends will think I am "chicken" if I don't smoke

_____ Because there's nothing wrong about smoking

_____ Because smoking makes me feel "grown up"

_____ Because my parents smoke, so why shouldn't I?

_____ Because my older brother and/or sister smoke

_____ Because smoking seems to calm me down

_____ Because smoking leaves a good taste in my mouth

_____ I smoke for other reasons than those listed above

NOW TURN THIS PAPER UPSIDE DOWN ON YOUR DESK, AND
WAIT FOR IT TO BE COLLECTED. BE CERTAIN THAT YOUR
NAME IS NOT PLACED ANYWHERE ON THIS FORM. THANK
YOU FOR YOUR COOPERATION.

INSTRUCTIONS FOR
THE STUDENT QUESTIONNAIRE ON SMOKING

A. QUESTIONNAIRE

Have each class member fill out the questionnaire at the beginning
of the semester.

Stress the need to check only one item in each of the first
three questions.

Stress the need to check one box for each of the statements
in Question #4 of the questionnaire.

The questionnaire should not be identified by name.

SECONDARY SCHOOL QUESTIONNAIRE ON SMOKING

1. Check The One Statement (And Only One) That Best Describes Your Cigarette Smoking At Present:

- A. I smoke half-a-pack or more of cigarettes just about every day.
- B. I smoke cigarettes just about every day, but less than half-a-pack a day.
- C. I do not smoke cigarettes every day, but I do smoke at least one day a week.
- D. I have smoked cigarettes (including trying them just to see what they were like) but do not smoke them at all regularly (at least one day a week) at the present time.
- E. I have never smoked cigarettes at all.

2. Check One -----Boy -----Girl

3. Present School Class -----7; -----8; -----9; -----10; -----11; -----12;

4. INDICATE HOW YOU FEEL ABOUT THE FOLLOWING STATEMENTS. CHECK THE BOX WHICH BEST REPRESENTS YOUR FEELING ABOUT EACH OF THE FIVE STATEMENTS..

		Neither		
Strongly	Mildly	agree nor	Mildly	Strongly
agree	agree	disagree	disagree	disagree

- | | | | | |
|-------|-------|-------|-------|---|
| ----- | ----- | ----- | ----- | A. Smoking costs more than the pleasure is worth. |
| ----- | ----- | ----- | ----- | B. When I have children I hope they never smoke. |
| ----- | ----- | ----- | ----- | C. There is nothing wrong with smoking. |
| ----- | ----- | ----- | ----- | D. Smoking is a dirty habit. |
| ----- | ----- | ----- | ----- | E. There is nothing wrong with smoking as long as a person smokes moderately. |

SCHOOL ----- CLASS -----
(i.e., Health Education, etc.)

CITY OR TOWN ----- COUNTY -----

DATE -----
Month Day Year

SELECTED KEY FACTS ON THE RELATIONSHIP OF SMOKING TO HEALTH AND DISEASE

The following facts and data are supported by research. The best single source of information for an elaboration is the Report of the Surgeon General, **SMOKING AND HEALTH**. This report is available from the U.S. Government Printing Office, Washington, D.C. 20402. It is referred to as Public Health Service Publication #1103 and costs \$1.25.

1. Cigarette smokers experience higher mortality rates at almost all ages.
2. An estimated two million teenagers begin smoking cigarettes each year (450 each day)
3. Studies vary as to the percentage of students who smoke, but nationally about one out of every three students smokes from junior high grades on.
4. A "one-pack-a-day" cigarette smoker spends about \$127 a year on cigarettes (\$2.45 per week). Americans spend more than eight billion dollars yearly on tobacco products.
5. Teenagers who do not smoke or who give up smoking reduce their chances of getting cancer, heart disease and other chronic respiratory diseases, such as emphysema and bronchitis.
6. It is estimated that a 20-year old male cigarette smoker loses about five years of life expectancy.
7. Smoking results in the development of a **STRONG, VERY DIFFICULT TO BREAK, HABIT**. Some authorities consider it an addiction in some people.
8. Many countries (including England, Norway, Italy, Sweden, Holland, Canada, Australia) have issued government warnings against cigarette smoking, and they have developed educational programs aimed at curtailing smoking among teenagers and adults. Iceland has placed a tax on cigarettes to be used for research and education on smoking and health.
9. The tobacco industry refutes the claims of a causal relationship between smoking and health, but has not been able to disprove present research findings.
10. Teenagers smoke cigarettes for reasons of group acceptance, defiance of authority, "something to do," symbol of maturity, social crutch. Teenagers with a variety of social and academic problems tend to smoke more than teenagers who do not have these problems.
11. The psychological factors in smoking are many and complex and are very difficult to combat.
12. Smoking decreases lung function and increases breathlessness.

13. Cigarette smokers suffer more from acute and chronic respiratory disease problems than do non-smokers.
14. Smoking reduces athletic ability. MOST ATHLETES DO NOT SMOKE.
15. Pregnant women smokers have more premature and stillbirths than do non-smoking pregnant women.
16. Smoking increases heart rate and blood pressure. For most persons smoking 1 to 2 cigarettes causes an increase in resting heart rate of 15 to 25 beats per minute. There is a rise in systolic and diastolic blood pressure.
17. Smoking dulls taste buds and depresses appetite.
18. Coronary heart disease occurs more frequently in cigarette smokers than among non-smokers.
19. Cigarette smokers experience ulcers more frequently than do non-smokers.
20. Cigarette smoke contains "tars" which can produce cancer in experimental animals.
21. Smoke "tars" inhaled over a long period of time damage the cilia lining of the bronchi and the basal cells below. Such damage is frequently an early sign of cancer.
22. About 50% of inhaled smoke remains in the lungs.
23. A smoker who inhales usually received from 1 to 2 milligrams of nicotine from a cigarette.
24. Filters do not remove all of the "tars" In spite of advertising implications, no cigarette is free of tars and nicotine.
25. By the time symptoms of lung cancer appear (chronic cough, blood in sputum, pain in chest) the disease is far advanced. Chances for cure of lung cancer are one in twenty.
26. Lung cancer rates have increased ten times in the past thirty years. Lung cancer now kills approx. 50,000 Americans each year.
27. One national life insurance company has come out with a 5% reduction in premiums for the non-smoker. Other insurance companies are considering plans for reduction in premiums.

SAMPLE OPEN LETTER TO PARENTS*
(Local School Letterhead)

Dear Parents:

Because of recent developments, your public schools (or name your school here) have become concerned with the problem of smoking and our youngsters. A smoking education guide has recently been released by the State Department of Public Instruction.

We are aware that in most instances, smoking begins outside of the school. If we are to embark upon a plan which will involve all of the efforts of our community we must have your help. Will you take a few moments to talk over the following points tonight with your son or daughter? The class will discuss these questions tomorrow.

1. Many adults smoke. Do some of these wish they had not started?
2. Is it easy to stop smoking? Why? Why not?
3. Do most parents wish their children would not smoke? Why?
4. How do parents and other grown-ups regard boys and girls who smoke?
5. Can we believe the advertisements on television and the radio or those of newspapers and magazines?
6. Do most coaches have strict rules about smoking? Why?
7. If you smoke, will you show the tars in cigarette smoke, or pipe and cigar, by blowing through a paper tissue held against the lips? Have your child label the various tissues so they may be used in class discussion.
 - a. Blow out some smoke which has not been inhaled.
 - b. Blow out some inhaled smoke. Is there a difference?

We will appreciate your help in reminding your children about the adverse effects of smoking upon boys and girls. If you have a home bulletin board, it might be interesting to post periodical articles on the subject found in the local press.

Please sign the letter in the space provided below and return it to school. If you have any suggestions or comments on this program, feel free to write them down on the reverse side.

Very sincerely yours,

I have received this letter and have discussed it with my child.

(Parent's signature)

*Adapted from a publication of the Spokane Public Schools, Washington

THOMPSON SMOKING AND TOBACCO KNOWLEDGE TEST

Abstract

A smoking and tobacco knowledge test was constructed from valid and scientifically established concepts. Twenty-five multiple choice test items were refined to the point where the item difficulty approached ideal standards for test construction. Reading level of the test was established as appropriate for those who read at or above the 7th-grade level. The test can be used as a pre- and post-test to improve tobacco and smoking health teaching.

Personal and Psychological Section

1. Do you smoke? Yes_____ No_____ Quit_____
Does your father smoke? Yes_____ No_____ Quit_____
Does your mother smoke? Yes_____ No_____ Quit_____
2. How long have you been smoking regularly (nearly every day, three or four times a week)?
 1. Less than one year
 2. One year to two years
 3. Three years
 4. Four years
 5. Five years or more
3. What type of cigarettes are you smoking? (Non-smoker omit)
 1. Regular
 2. Filter tip
 3. King size - regular
 4. King size - filter
 5. Menthol
4. How much do you smoke each day? (Non-smoker omit)
 1. Less than five cigarettes
 2. Five to nine cigarettes
 3. Ten to fifteen cigarettes
 4. One to two packs
 5. More than two packs

5. I continue to smoke because (Non-smoker omit)

1. It soothes my nerves
2. It is a habit
3. It gives me something to do with my hands
4. It is accepted by my social group
5. It gives me a lift

6. What were the most important factors in why you are a non-smoker? (Non-smokers answer this.) Place a check in the column which is most descriptive of your reaction to each factor.

	Great Influence	Some Influence	Little Influence	No Influence
1. Religious training				
2. Health implications				
2. Expense				
4. Interest in sports				
5. Parental objections				

7. What were the most important factors in your starting to smoke? (Smokers answer this question.) Place a check in the column which is most descriptive of your reaction to each factor.

	Great Influence	Some Influence	Little Influence	No Influence
1. Freedom from parental control				
2. Advertising of some type (TV, radio, etc.)				
3. Parents smoked				
4. Being done by my social group				
5. Symbol of adulthood				

Historical and Sociological Section

8. The gift of tobacco to the world was made

1. By the Chinese
2. By the Egyptians
- *3. By the American Indians

4. By the Ancient Greeks
5. By the Romans
9. The nation with the present greatest per capita (person) consumption of cigarettes
 1. Germany
 - *2. United States
 3. Great Britain
 4. Japan
 5. Russia
10. It is estimated the average cigarette smoker spends for tobacco per year
 1. \$ 10 - \$ 15
 2. \$ 26 - \$ 50
 3. \$ 51 - \$ 75
 4. \$ 76 - \$100
 - *5. \$101 - up
11. The combined state and national cigarette taxes are
 1. 1¢ per pack
 2. 3¢ per pack
 3. 5¢ per pack
 - *4. More than 5¢ per pack
12. Heavy cigarette consumption in the United States
 1. Began after the Civil War
 2. Has always been a part of American life
 3. Came with the Industrial Revolution
 - *4. Began during World War I
 5. Began during World War II

13. Cigarette smoking among women has increased to the point that
1. More than 55 per cent of American women smoke
 2. Between 50 and 75 per cent of American women smoke
 - *3. Between 25 and 50 per cent of American women smoke
 4. Under 25 per cent of American women smoke
14. Cigarette advertisements are
1. Generally true and valid
 - *2. Questionable in truth
 3. Based on scientific research
 4. Checked by medical authorities before publication
15. Cigarette consumption in recent years in the United States has
1. Decreased slightly
 2. Increased alarmingly
 3. Held steadily
 - *4. Increased steadily but moderately.
 5. Doubled since 1950

Physiological Section

16. The irritation to the nose and throat by smoking
1. Is caused by the nicotine in tobacco
 2. Is due to the hot smoke
 3. Is caused by the tobacco tars
 - *4. Is caused by the ammonia gases in the smoke
 5. Is caused by carbon from burning paper
17. The male cigarette smoker's chances of developing lung cancer are
1. Slightly greater than the non-smoker
 - 2.. No different than a non-smoker
 - *3. At least five times greater than non-smoker

4. Greatly reduced by filter cigarettes
18. The blood pressure reaction of the average person to smoking is that it
 1. Will not be affected by smoking
 2. Will be lower after smoking
 3. Will be raised an insignificant amount
 - *4. Will be raised considerably for a period as long as an hour
 5. Will not affect the habitual smoker
19. The effect of smoking on the appetite is that it
 1. Increases the appetite
 - *2 Aids in reducing the hunger feeling
 3. Has no influence on the appetite
 4. Takes the place of sweets
20. The substance in tobacco which causes lung cancer is
 1. The hot smoke
 2. Nicotine
 3. Some unknown factors in tobacco
 - *4. Tobacco tars
 5. Carbon monoxide in tobacco smoke
21. The work load (amount of work) of the heart of a habitual smoker is
 1. About the same as a non-smoker
 2. Slightly higher than a non-smoker
 - *3. Substantially higher than a non-smoker
 4. Not affected because of the tolerance developed to tobacco
 5. Lower in the smoker than the non-smoker
22. Strength tests have proved that smoking
 1. Increases strength of growing boys and girls
 2. Decreases your strength slightly

3. Decreases your strength noticeably
 - *4. Has no effect on strength
 5. Effects the strength of the habitual smoker only
23. Lung cancer of pipe and cigar smokers is
1. Much higher than non-smokers
 - *2. Slightly higher than non-smokers
 3. Dependent upon the amount of smoking
 4. Related to the number of years the individual has been smoking
24. The amount of nicotine absorbed when one smokes depends
1. Upon the amount of smoking
 2. Upon the sex of the smoker
 3. Upon the speed (rate) of smoking
 - *4. Amount and depth of inhaling
 5. Rate of breathing
25. The effect of smoking on the average heart is
1. A decrease in heart rate
 2. No effect on heart rate
 3. An increase in heart rate for a period of several minutes
 4. An increase in heart rate of beginning smokers
 - *5. An increase in heart rate for a period of 15 minutes to an hour
26. The metabolic rate (rate foods are used in body) is generally
1. Decreased by smoking
 2. Unchanged by smoking
 3. Dependent on the form of tobacco (cigarettes, cigars, etc.)
 4. Lower in beginning smokers
 - *5. Increased by smoking
27. In the last 25 years the lung cancer rate in men has

1. Increased slightly
 2. Shown no increase
 3. Decreased slightly
 4. Increased more than 50 per cent
 - *5. Increased more than 100 per cent
28. The reaction time of a person is
- *1. Unaffected by smoking
 2. Slowed down when one smokes
 3. Speeded up when one smokes
 4. Varied with the amount of inhaling
 5. Affected only in beginning smokers
29. The majority of American physicians believe lung cancer is
- *1. Associated with long time heavy cigarette smoking
 2. Primarily caused by air pollution
 3. Related to the general health of the individual
 4. Due to unknown factors
 5. Generally caused by cigar and pipe smoking
30. To check his sensitivity (bodily response) to tobacco a person can
1. Smoke the brand of cigarettes that agrees with him
 2. See if he feels nervous when smoking
 3. Be alert for heart fluttering while smoking
 - *4. Record the heart rate and blood pressure before and after smoking
31. The so-called smoker's cough
1. Is a misnomer (not correctly named)
 2. Is found in both smokers and non-smokers
 - *3. Is caused by irritation of the mucous membranes of the nose and throat

4. Is thought to be a nervous reaction to smoking
 5. Is caused by smokers inhaling too much nicotine
32. Filter cigarettes are
1. Completely safe to smoke
 2. Thought to contain dangerous substances in the filter
 - *3. Of questionable value
 4. Able to filter out all nicotine
- *(Denotes the correct answer throughout the questionnaire.)

BIBLIOGRAPHY

Smoking and Health Kit, c/o National Library of Medicine, Bethesda, Maryland, 20014.

The Consumers Union Report on Smoking and the Public Interest, Brecher Goodman, Herzog and Walker, \$1.50, Consumers Union, Mt. Vernon, New York.

Dying to Smoke, Robert Osborn and Dr. Fred Benton, Houghton Mifflin Company, 2 Park Street, Boston, Massachusetts.

Smoking - The Great Dilemma, Ruth and Edward Brecher, Public Affairs Pamphlet #361, 381 Park Avenue South, New York, New York, 10016, 25¢.

Cigarettes and Health, Pat McGrady, Public Affairs Pamphlet #220A, 22 East 38th Street, New York 16, New York, 25¢.

FILM:

Smoke, Anyone?, 7 minutes color film available from the center for Mass Communication of Columbia University Press, 1125 Amsterdam Avenue, New York, New York, 10025.

FIRST RECOMMENDED LIST
OF CURRENTLY AVAILABLE EDUCATIONAL MATERIALS
made by the

Committee on Health Education Materials
National Interagency Council on Smoking and Health

GROUP I For teachers and school and public libraries

1. **Answering the Most-often-asked Questions about Cigarette Smoking and Lung Cancer**, 1964. Available from the American Cancer Society, 219 East 42 Street, New York, N. Y. 10017.
2. **Cigarette Smoking among High School Students**, 1959. (Also for counselors, and youth workers) Available as reprint from **American Journal of Public Health**, Vol. 49, No. 11, from American Public Health Association, 1790 Broadway, New York, N. Y. 10019.
3. **Cigarette Smoking and Cancer**, 1963. Available from the American Cancer Society, 219 East 42 Street, New York, N. Y. 10017.
4. **The Effects of Smoking**, 1962. Reprint from **Scientific American**. (For science teachers.) Available as reprint from W. H. Freeman and Company, 660 Market Street, San Francisco 4, California.
5. **Modifying Smoking Habits in High School Students**, 1960. Available as reprint from **Children**, Vol. 7, No. 2, from Superintendent of Documents, U.S. Government Printing Office, Washington D.C. 20402.
6. **Smoking and Health, Summary of the Report of the Advisory Committee to the Surgeon General**, 1964. Supplement to full report. Available as reprint from **Health, Education and Welfare Indicators** from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.
7. **Smoking and Health, Summaries and Conclusions**, 1964. Reprint of Chapter 4 of Surgeon General's report without the supporting documentation. Available from the American Cancer Society, 219 East 42 Street, New York, N. Y. 10017.
8. **Teen-agers and Cigarettes**, 1962. Available as reprint from **Changing Times**, 1729 H Street, N.W., Washington, D. C. 20406.

GROUP II For the general adult public

- B1. **Answering the Most-often-asked Questions about Cigarette Smoking and Lung Cancer**, 1964. Available from the American Cancer Society, 219 East 42 Street, New York, N. Y. 10017.
- B2. **Chronic Bronchitis, the Facts**, 1963. Available from the National Tuberculosis Association, 1790 Broadway, New York, N. Y. 10019.
- B3. **Cigarettes and the Schools**, 1964. Available from Publications-Sales Section, National Education Association, 1201 Sixteenth Street, N.W., Washington, D. C. 20036.

B4. **Cigarette Smoking and Cancer**, 1963. Available from the American Cancer Society, 219 East 42 Street, New York, N.Y. 10017.

B5. **Cigarette Smoking, the Facts**, 1964. Available from the National Tuberculosis Association, 1790 Broadway, New York, N. Y. 10019.

B6. **Emphysema, the Facts**, 1963. Available from the National Tuberculosis Association, 1790 Broadway, New York, N. Y. 10019.

B7. **Smoking and Heart Disease**, 1964. Available from American Heart Association, 44 East 23 Street, New York, N. Y. 10010.

B8. **Smoking and the Heart**, 1964. Public Health Service Publication No. 1103-b; available from U.S. Government Printing Office, Washington, D.C. 20402.

B9. **Teen-agers and Cigarettes**, 1962. Available as reprint from **Changing Times**, 1729 H Street, N.W., Washington, D.C. 20406.

B10. **To Smoke or Not to Smoke?** 1964. Available from the American Cancer Society, 219 East 42 Street, New York, N. Y. 10017,

B11. **Your Teenage Children and Smoking**, 1964. Children's Bureau publication no. 423-1964; available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

GROUP III For students

C1. **Answering the Most-often-asked Questions about Cigarette Smoking and Lung Cancer**, 1964. (Recommended for young people ONLY IF SUGGESTED BY TEACHER). Available from the American Cancer Society, 219 East 42 Street, New York, N.Y. 10017.

C2. **Cigarette Smoking among High School Students**, 1959. (Recommended for mature students ONLY IF SUGGESTED BY TEACHER). Available from American Public Health Association, 1790 Broadway, New York, N.Y. 10019. (see #2 above.)

C3. **Don't Let Your Health Go Up in Smoke**, 1960, Available from the Pennsylvania Tuberculosis and Health Society, 311 S. Juniper Street, Philadelphia, Pennsylvania 19107.

C4. **The Effects of Smoking**, 1962. (Recommended for mature students ONLY IF SUGGESTED BY TEACHER). Available as **Scientific American** reprint from W. H. Freeman and Company, 660 Market Street, San Francisco 4, California.

C5. **Filter the Facts**, 1963. Available from the Pennsylvania Tuberculosis and Health Society, 311 S. Juniper Street, Philadelphia, Pennsylvania 19107.

C6. **I'll Choose the High Road**, 1964. Available from the American Cancer Society, 219 East 42 Street, New York, N.Y. 10017.

C7. **Shall I Smoke?** 1964. Available from the American Cancer Society, 219 East 42 Street, New York N.Y. 10017.

C8. Smoking and Health, Summary of the Report of the Advisory Committee to the Surgeon General, 1964. (Recommended for mature students ONLY IF SUGGESTED BY TEACHER). Available as **HEW Indicators** reprint from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

C9. Smoking, Health, and You, 1964. Children's Bureau publication no. 424-1964; available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Materials requested from national organizations are referred to the local chapters within the state for filling requests. Following is an additional listing of materials available from the South Dakota Heart Association, First Federal Building, Watertown, South Dakota: 57201-

GROUP I For teachers and school and public libraries

1. **About Your Heart and Your Blood Stream** (1962 Pamphlet)
An illustrated simple explanation of the heart and circulatory system for children. (Grades 4-6) pp. 4
2. **High Blood Pressure** (1962 Pamphlet)
What hypertension is and what the physician and patient can do about it. (Grades 9-14) pp. 15
3. **How the Doctor Examines Your Heart** (1956 Pamphlet)
Describes what the doctor does and why. (Grades 7-14) pp. 31
4. **Heart Attack** (1959 Pamphlet)
What happens; recovery, how to help. (Grades 9-14) pp. 9
5. **Heart Puzzle** (1956 Pamphlet)
A diagram of the heart with an explanation of function of the heart, arrows for posting on diagram to show blood flow; guide for teachers. (Grades 4-14)
6. **Lifeline: The Story of Your Circulatory System** (1959 Book)
Schematic drawings of the circulatory system, 8½" by 11"; and a chart, 22" by 36". (Grades 9-14)
8. **What Everyone Should Know About Smoking and Heart Disease** (1964 Pamphlet)
Answers several questions about Smoking and Heart Disease
9. **Where There's Smoke...There's Danger from Heart Disease!** (1964 Leaflet)
Lists three good reasons for Not Smoking
10. **Your Heart and How It Works** (1955 Chart)
Schematic Drawing Heart Diagram 8½" by 11" (Grades 9-14)
Heart Chart 17" by 22" (Grades 7-14)

The following films are also available from the Heart Association:

- 1.. **About the Human Body** (1959) 15 minutes black & white
Grades 5 & 6
2. **Circulation of the Blood** (1958) 8 minutes color Grades 7 & 8
3. **Coronary Heart Disease** (1957) 6 minutes; color; Grades 9-12

Other materials available on Smoking and Heart Disease:

1. Smoking and Heart Disease Posters
2. Smoking—The Great Dilemma. . . (Public Affairs Pamphlet—
Discussion of the Surgeon General's Report)
3. What I Tell My Patients About Smoking (Physician and
Teacher Education)

Other materials may be obtained from state organizations, such as:

American Cancer Society
South Dakota Division
P. O. Box 865
Watertown, South Dakota 57201

South Dakota Tuberculosis and Health Association
109½ First Street, N.W.
Madison, South Dakota 57042